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NATIONAL PETROLEUM NEWS

February 21, 1940

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Vice President in charge of manufacturing for Mid-Continent Petroleum Corp. which recently announced a $2,500,000 building program for 1940.

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HEADS PETROLEUM DIVISION OF THE A.I.M.E.

Thomas Verner Moore

● THIRTY-TWO years old and chairman of the Petroleum Division of the American Institute of Mining and Metallurgical Engineers for 1940—that is the distinction of Thomas Verner Moore, of Houston, Tex. He is head of the Production Research Department of Humble Oil and Refining Co.

Mr. Moore has crowded a lot of schooling and practical experience into his 32 years.

Born in Omaha, Nebr., Sept. 5, 1907, he has resided in Texas since 1913. After his graduation from Virginia Military Institute in 1925 with a science degree, he decided definitely on an engineering career. He entered Rice Institute in Houston, receiving a degree in chemical engineering. His employment with Humble began in 1927, leaving during a portion of 1928 and 1929 to receive a masters degree at M.I.T. In 1933, he became head of the company's production research department.

Mr. Moore's outstanding work has been in determining the relationship between rate of oil and gas production and rate of decline of reservoir pressures. His forecasts of reservoir pressures in East Texas field were not generally accepted in early life of the field, but actual performance has shown his calculations were correct.

He is a prolific author of technical papers, has been very active in A.I.M.E. affairs and was a leader in forming the present Gulf Coast Section of that organization.

NATIONAL PETROLEUM NEWS

VOLUME 32 WEDNESDAY, FEBRUARY 21, 1940 NUMBER 8

A.P.I. Sets Up District Units For Marketing

N. P. N. News Bureau

NEW YORK, Feb. 19.—American Petroleum Institute's Division of Marketing met here Feb. 14, and to facilitate the administration of the division, approved a plan to divide the U. S. into five districts, Eastern, Southern, Central Rocky Mountain, and Pacific Coast, with a chairman and marketing committee for each district.

After conference with the general committee, Chairman of API's Marketing Division, E. V. Weber, Cincinnati, Eureka Oil Co., appointed H. W. Dodge, New York, The Texas Co., chairman of the Eastern Division; T. M. Martin, El Dorado, Ark., Lion Oil Refining Co., chairman of the Southern Division; B. L. Majewski, Chicago, Deep Rock Oil Corp., chairman of the Central Division; W. H. Ferguson, Denver, Continental Oil Co., chairman of the Rocky Mountain Division, and R. K. Davies, San Francisco, Standard of California, chairman of the Pacific Coast Division. The chairman of each division will appoint members of the regional committees.

In addition, the marketing division appointed seven members to a "Program Committee". They are: Walter L. Faust, Socony-Vacuum Oil Co., chairman; S. B. Eckert, Philadelphia, Sun Oil Co.; L. T. Kittinger, New York, Shell Oil Co.; A. A. Stambaugh, Cleveland, Standard Oil Co. of Ohio; Edwin S. Hall, New York, Standard Oil Co. of N. J.; Harry T. Klein, New York, The Texas Co., and Roy T. Osborn, New York, Sinclair Refining Co. This committee will plan details of programs for the regional divisions and also marketing program for the annual meeting of the Institute at Chicago, Nov. 11 to 15.

It was decided that no marketing group "sessions" would be held at the mid-year meeting, May 27 to 31 at Fort Worth, Texas.

Ethyl Argument Set

WASHINGTON — Argument of the Ethyl Gasoline Case, involving jobber licenses, is scheduled for hearing by the U. S. Supreme Court late this month or early next month.

First to Testify

George A. Hill, Jr., Houston, Tex., opens oil industry's fight against federal oil control before Cole oil sub-committee at Washington

Industry Opens Fire On Federal Oil Bill

By Teletype
N. P. N. News Bureau

WASHINGTON, Feb. 20. — Possibility that a "federal oil control" bill which would apply only to those states which do not now have conservation laws might be substituted for the broad federal control bill now before the Cole Oil Subcommittee was seen by some observers here today, as the sub-committee continued to hear witnesses condemn the bill as unconstitutional, unnecessary, dictatorial, and the first step toward complete federal control of all industry.

This possibility was based on the premise that opposition to the present bill (HR 7372) from the industry and the oil states, plus the known opposition of Republican legislators to any type of federal regulation of this sort, would prevent any floor consideration of the measure, as well as from the type of questioning by committee members during the hearings, and particularly the past two days.

Committee members questioning witnesses have consistently returned to the problems of California and Illinois, asking if the oil industry itself did not feel these states should be regulated. In most cases, witnesses have declared the belief that Illinois and California would soon pass conservation laws and align themselves with the other producing states.

Hill Leads Off

Lead-off witness for the oil industry on Monday was George H. Hill, Houston Oil Co.

First witness at the Tuesday session was Andrew F. Schoeppel, vice chairman of the Interstate Compact Commission, who presented a paper prepared by Hiram M. Dow of New Mexico on behalf of the commission. It was chiefly a factual outline of the organization and work of the compact, and concluded:

"We feel that with such a record behind it all the . . . compact needs and asks is unhampered freedom to carry on the moulding of public opinion which it has set as its goal, to the end that the general uniformity of laws, and their enforcement, will in the near future become ideal in all oil producing states."

Pursuing the line of questioning used on other witnesses, Rep. Wolverton sought to find out from Mr. Schoeppel what went on at the August meeting of the compact which preceded the shutdowns of last August. The witness said Col. E. O. Thompson, former chairman of the commission, who is ill in Austin, would be the best witness to tell of that, and it was arranged to have both Col. Thompson and Mr. Dow, also ill in a Washington hotel, appear before the committee at a later date.

Mr. Wolverton's remarks about witnesses being ill who could tell the committee what it wanted to know, led former Gov. William Holloway, Okla.,

(Continued on page 9)

26-Word Code Recommended By Kentucky Oil Marketers

LOUISVILLE, Ky., Feb. 15.—The fourteenth annual convention of the Kentucky Petroleum Marketers Ass'n. at Louisville, February 14th and 15th, approved the adoption of probably the shortest trade code on record. That code said:

> "The lending, leasing, loaning, selling or otherwise furnishing of service station equipment of all descriptions to dealers or consumers is hereby declared an unfair trade practice."

In the recommendation of the Jobbers Division of the Kentucky association, they put in a lot of whereases, but they are all to the effect that the Federal Trade Commission be petitioned to institute this one sentence as a code. If this were done, and the code enforced and it worked, there would be plenty of time to add other provisions. It was the opinion of the members of the association that perhaps one reason why previous codes have not lasted and one reason why the FTC has not agreed to inaugurate a new code, is because codes are generally long and complicated and troublesome.

L. J. Connelly of Louisville, Continental Oil Co., an independent marketing company, acted as chairman of the Jobbers Division, which produced this world's briefest code.

More than 100 members attended the meeting of the association. They re-elected for the third time Sewell C. Harlin, independent oil marketer of Glasgow, Ky., and head of Central Oil Co., as president; C. E. Bauer, Louisville, Continental Oil Co., first vice president; and A. J. Sehlinger, of Louisville, Mid-Continent Petroleum Corp., second vice president. The directors C. W. Healy, Louisville, Gulf Refining Co., and W. S. Glore, Jr., Danville, Ky., Glore Oil Co., were re-elected, and Fred Stokes, Hickman, Ky., Newton Oil Company, was elected a new member of the board. Herbert L. Clay was

(Continued on page 6)

North Carolina Marketers To Seek Price-Posting Law

N. P. N. News Bureau

RALEIGH, N. C., Feb. 15.—An amendment to the North Carolina fair trade law to require posting of petroleum products prices by all sellers—wholesale and retail—and strict adherence to posted prices, will be sought at the next session of the Tarheel legislature in 1941, by the North Carolina Oil Jobbers' Ass'n.

The amendment sought would also make sales to commercial consumer accounts at prices below those to jobbers, who take equal or larger quantities, unlawful. It has not yet been drafted, but was broadly outlined at the meeting of the jobbers' group here Feb. 14 by its president, John W. Parker, New Bern, of Coastal Petroleum Co., and secretary, E. B. Juliber, Greensboro.

Another portion of the jobbers' 1941 legislative program, proposed by its board of directors and agreed to at the meeting, is an effort to secure an increase in the shrinkage—loss allowance ("tare") granted oil distributors in the state. At present the allowance is 1%, and it is hoped to double this, through personal contact with legislators by the individual members of the association.

'Bring the Meeting to You'

President Parker and Secretary Juliber announced at the meeting that "group" gatherings will be held in nine cities of the state—one each week—beginning the first week in March. for the purpose of "bringing the meeting" to jobbers who otherwise are unable to attend general statewide meetings, because of the length of the state (almost 600 miles.)

It is the plan to hold these meetings within the areas wherein reside the association's nine directors, and by this means to work up a larger interest in the association, which now has as members about 60 per cent of the state's jobbers. The group meetings will be so spaced that at least one of them will be within a 50-mile drive of every jobber in the state.

First meeting will be held at Washington, and will be followed with sessions at Goldsboro, Rocky Mount, Fayetteville, Durham, Hickory, Winston-Salem, Charlotte, and Asheville.

President Parker reported on arrangements for "group" buying (see accompanying article on this page).

Gubernatorial Candidate Talks

Speaker at the jobbers' session was J. M. Broughton, Raleigh, one of the six candidates for the democratic gubernatorial nomination, who told the oil men he did not think diversion was any issue in the forthcoming gubernatorial campaign, since all six candidates had declared themselves against it.

While he pledged himself to "maintain the integrity" of the road fund in the state, if elected, Candidate Broughton said he did not favor a constitutional amendment, because the constitution was a document wherein are stated great, broad principles, rather than a document to have legislation "tacked" onto it.

Next general statewide meeting will be held in May, it was announced; probably in Greensboro.

'Group Buying' of Equipment Planned By North Carolina Oil Jobbers Assn.

RALEIGH, N. C., Feb. 15.—Arrangements are being completed for members of the North Carolina Oil Jobbers Ass'n. to buy gasoline pumps, hose, compressors, and other service station equipment "at the same discount as their major-company competitors," according to John W. Parker, New Bern, of Coastal Petroleum Co., president, reporting at the association meeting here Feb. 14.

Late in January, after talking with a number of pump manufacturers' representatives, Mr. Parker reported, he, as an individual, entered an order for 50 computing pumps of a certain make, deliverable within 90 days. Members were informed that, if they took all of these pumps within the specified time, they would get a "major purchaser's discount."

The "group buying" plan is handled through Mr. Parker, although it is an association activity, having been approved by the board of directors.

The procedure was explained: Marketers desiring to buy a pump or two, or a dozen, notify Mr. Parker. He orders them on his account, asking that the pumps be sent to him care of the purchaser, at the purchaser's address. When delivered, the purchaser honors a sight draft accompanying them.

The "group buying" plan is being used as an argument to bring new members into the association. E. B. Juliber, association secretary, in making the rounds of North Carolina marketers, is pointing out that "savings" on one purchase as a result of "group buying" will more than pay for a year's association dues in many instances. Discounts range from 10% upwards, depending on type of equipment, Mr. Parker explained.

26-Word Code Recommended By Kentucky Oil Marketers

(*Continued from page* 5)

as usual retained as the secretary and treasurer.

On the opening day, Feb. 14, Terry P. Smith, banker of Mayfield, Ky., told the members to beware of new theories and ideas and that sound business was still based upon the time-honored fundamentals of good business management.

Warren C. Platt, editor of NATIONAL PETROLEUM NEWS, discussed some of the oil industry's current problems.

Oil's Talking Points Cited

The second day Carl Barker, St. Louis, public relations director of Shell Oil Co. Inc., told the members of all the various interesting information which could be told to the public to give it a different conception of the oil industry — information concerning each member's relationship with the public, the number of employes the industry has, the number of stockholders, its patronage of other industries, and so on.

Harry M. Rugg, automotive engineer in charge of the Detroit office of the Pennsylvania Grade Crude Oil Association, told of recent improvements in lubricating oils made to meet the exactions of modern high speed and high pressure bearings and high speed engines.

Elmer Wheeler, professional sales lecturer of New York, gave an inspirational as well as practical sales talk.

The annual dinner was Thursday night. A professional humorist talked. There was an orchestra and vocalists.

Truck Tax Fought

While the association was in session, there was pending in the State Legislature at Frankfort, a bill to tax oil trucks $25 each for each county that they traveled through. It was stated that this was done in order to raise some $80,000 to advertise the state and get tourists there. Members of the association sent in their protests by wire and telephone so that the last day of the session Secretary Clay was able to announce that the bill had been amended and the tax cut to $15 per truck, with no extra charge for the counties that it traversed. However, this bill was up for final passing at once.

Mr. Clay explained the feeling in the state legislature was that the oil industry was the only benefactor from tourist business, whereas, he pointed out, the average tourist spent only 20c out of every dollar for transportation and that all the oil man actually got out of this 20c, after taxes, costs and everything else was paid, was about 1½c. He said it would be better if the state fixed up a lot of its roads before it started any advertising and let those better roads do some of the advertising for the present time.

DemurrersOverruled In West Coast Case

N. P. N. News Bureau

LOS ANGELES, Feb. 13. — Federal Judge Paul J. McCormick today overruled demurrers interposed by the Fair Practices Ass'n., the California Independent Refiners Ass'n., and 21 independent oil companies to an indictment charging conspiracy to violate the Sherman Anti-Trust Act. Counsel for major oil companies did not join in urging the demurrers. On March 12 more extended argument is expected when applications for bills of particulars are scheduled to be presented by counsel for the major and secondary companies, as well as for a number of independent firms.

First Wage-Hour Oil Case Decided Against Marketer

N. P. N. News Bureau

WASHINGTON, Feb. 19.—A federal court in South Carolina has issued an injunction against a Charlotte (N. C.) oil jobbing concern, ordering it to "cease violating" the federal wage-hour law, and to pay more than $2000 in back wages and overtime due six employes.

It is the first case under the wage-hour law involving an oil company that has come to light. Wage-Hour officials here said they did not think it would be appealed. Even so, the case may not be decisive of a local oil marketer's status under the law as the defendant made some shipments across the state line, ten miles away, into South Carolina.

The company is Pennsylvania Oil Co., operated by E. R. Miller and J. C. Miller, of Jefferson, S. C. It is a lubricating oil, fuel oil and kerosine jobbing concern, employing about 16 persons.

Complaint of the Wage-Hour Division alleged the company did not pay certain of its employes (two in its office and four in its warehouse) the minimum wage of 25 cents per hour, as required up to Oct. 24 last year, and 30 cents per hour since that time, and that it did not pay time-and-a-half for overtime over 44 hours up to last Oct. 24 and 42 since that time, as required.

Defendants were also charged with failure to keep adequate records, and with shipping in interstate commerce goods handled by persons paid sub-minimum wages and working excess hours without overtime. After issuance of the injunction and the order to pay the back wages, the criminal proceedings against the Millers were dropped.

Contacted over long-distance telephone by NATIONAL PETROLEUM NEWS, officials of the company declined to enlarge further upon the case.

Ship Outside the State

The company's supplies come by tank car from Pennsylvania and other points outside the state, as well as by transport truck from ocean terminals within the state. Some shipments from the company's plant, both in bulk and in cans, go outside of the state, it is understood.

The Millers were in the gasoline and oil jobbing business at Jefferson for a number of years, before selling out to a distributor for a major company. The Charlotte concern is of comparatively recent origin, jobbing other petroleum products than gasoline. In addition, the Millers run a fertilizer concern at Jefferson.

Octane Study Spurs Interest in Meeting Of W.P.R.A., April 1

N. P. N. News Bureau

TULSA, Feb. 19.—The technical and general sessions of the 28th annual convention of the Western Petroleum Refiners Ass'n. at Wichita, Kans., March 31 through April 3 are expected to be the most important held in the past few years.

Confusion now existing over octane number determination makes the report of the special sub-committee of the association's octane committee of unusual importance. This report, drafted following a careful study of the situation by the committee, will be presented at the first general session, the afternoon of April 1.

In addition to a discussion of octane rating at the general session, plans are being completed for a similar discussion at the technical meetings. The discussions will be tied into papers pertaining to the newest methods of refining and treating.

The Ethyl Gasoline Corp. again will be host at a buffet supper, the one this year to be held the evening of March 31. The annual dinner dance will be held the night of April 2.

On the morning of April 3 members will be taken by bus to Augusta, Kans., as guests of Socony-Vacuum Oil Corp., to see the recently installed Houdry unit at the corporation's White Eagle division refinery.

Correction

Front cover of NPN, Feb. 14, stated that Shell Oil Co. was "only company to meet California Standard's crude price cut." This was incorrect as it was not Shell, but Richfield Oil Corp. that cut crude price. Article on Page 21 of that issue gave correct version.

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FTC Explains Its Reasons For Turning Down Oil Code

N. P. N. News Bureau

WASHINGTON, Feb. 19.—Federal Trade Commission has given the proposed voluntary oil marketing code "much study and consideration" but has found no way "thus far . . . to bring the proposals into harmony with the law and public interest."

That, briefly, is the substance of a letter just received by Sen. Elmer Thomas, Okla., from the FTC. Sen. Thomas had written the commission inquiring about status of the oil code. Full text of the commission's letter follows:

Hon. Elmer Thomas,
United States Senate,
Washington, D. C.

My dear Senator Thomas:

This is in further response to your letter of January 29, 1940, regarding trade practice proceedings for the Petroleum Industry and, in effect, indicating you have been informed that members of a committee of the industry have been requesting the Commission to devise and approve certain trade practice rules for the industry, but that the Commission has taken no action since such request was made, in February, 1939.

In reply we beg to advise that any such claim that the Commission has taken no action in the premises is in error. Not only was action taken in September, 1937, on the rules and proposals presented by the industry committee, but thereafter and subsequent to February, 1939, the date to which you refer, much study and consideration was also given to the questions involved, with the result that thus far no way has been found to bring the proposals into harmony with the law and the public interest.

In the proceeding which came before the Commission, a committee of three persons, designated as "The National Committee for the Petroleum Industry," C. E. Arnott, Chairman, submitted for Commission approval certain proposed rules. These were duly considered, passed upon, and rejected by the Commission, which action was publicly announced under date of September 5, 1937.

The rules were rejected, as stated in the release, because their approval or acceptance "would be contrary to law and the public interest." The Commission at the same time ordered that the industry be accorded full opportunity to present to the Commission for its consideration such amendments of or substitutions for the rejected rules as are in harmony with the law. At no time since has the industry submitted any specific or concrete amendments or substitute rules.

Meanwhile the Madison oil prosecutions under the antitrust laws got under way and no further matters were submitted by the industry. Moreover, it was understood that the Department of Justice did not desire the Commission to proceed with rules during this period because of possible complications which might arise in relation to the antitrust proceedings.

Subsequently two or three persons, including Mr. Arnott, conferred informally with members of the Commission's staff and requested that the matter be given further study and that rules of the type desired by such members on price posting, lease and loan of filling station equipment and on various other subjects might be prepared for their consideration if it be found possible to bring the requirements within the properties of the law so they might be approved by the Commission.

Accordingly, further consideration was given and studies were made. They have not, however, revealed how the industry committee's proposals might be imposed and sanctioned without bringing about illegal results such as control of prices and restraint of trade through agreement or combination of competitors. It is the policy of the Commission not to give sanction to undertakings which might have a dangerous tendency to effectuate unlawful restraints of trade.

The following brief statement of some of the crucial points involved in the matter of trade practice rules as presented by members of the industry committee will be sufficient, we believe, to make apparent the serious question of illegality inherent in the subject.

As to price posting, the proposals to the Commission seek to have it require by rule that each filling station operator and marketer of gasoline throughout the country shall post his selling price and shall be required to sell only at such posted price to all his various customers. While it is probably the undoubted right of each businessman to post his selling price or not to post it, as he in his individual discretion sees fit, it becomes a serious matter when attempt is made to require by rule or agreement among competitors that each shall post his price and shall sell only at such posted price. Neither the law as presently interpreted nor the public interest appears to justify or warrant approval or sanction of such arrangement.

In the matter of leasing and loaning of filling station equipment, the rule sought is to the effect that jobbers, wholesalers, refiners, shall be prohibited from leasing or loaning pumps, tanks or other equipment to filling station owners; or, in other words, they are to be prohibited from assisting small businessmen or others in establishing or operating filling stations. More specifically, the proposal was that hereafter no producer, jobber, refiner, wholesaler, distributor or dealer shall "construct, lease, lend, furnish, install, or re-locate pumps, tanks, driveways, buildings, canopies, air compressors, lubricating oil storage or dispensing equipment, grease lifts or pits, grease equipment, grease guns, air towers, light poles, flood lights, material for driveways, buildings or canopies or any other equipment of any character whatsoever used or useable in connection with the storage, display, sale or consumption of petroleum products (excepting only oil burners and storage tanks connected therewith, pump globes and the usual advertising signs) for or to anyone engaged in the sale or delivery of petroleum products to consumers or for or to consumers."

Besides the question as to the want of legality in imposing such requirement, it appears that the chain filling stations owned by the major oil companies would still have their pumps, tanks and other equipment furnished by the refiners or producers, but the rule as proposed would operate to deprive the competing independent filling station operator from receiving similar equipment or assistance from refiners or producers or from any other vendor of petroleum products.

The propriety of similar restrictions even in relation to Section 3 of the Clayton Act was rejected by the Supreme Court in a series of Commission cases against the Standard Oil Company (N. J.), Sinclair Refining Company, Gulf Refining Company, Maloney Oil & Mfg. Company (261 U. S. 463).

The proposed rules involved other legal questions, such as lack of Federal jurisdiction over local retail filling stations not operating in interstate commerce, which is essential to Federal jurisdiction.

The matter of trade practice rules for the Petroleum Industry is closely related to enforcement of the antitrust laws. The Commission has co-operated with the Department of Justice in avoiding any action which might interfere with their enforcement of such laws. The Commission has given this point much attention, particularly in view of the fact that the Department of Justice has for some time been proceeding against various groups in the oil industry, such as the Madison oil prosecutions; investigation and indictment of major oil companies and others in the Pacific Coast territory; and other proceedings by the Department.

I trust this supplies the information desired and that it will assist you in a correct understanding of the situation.

By direction of the Commission.

Yours very sincerely,
(signed) Ewin L. Davis
Chairman.

Chicago Inventors Honored At 'Modern Pioneers' Dinner

N. P. N. News Bureau

CHICAGO, Feb. 20.—Nine oil industry technologists will receive awards at a dinner here tonight, for their work as inventors and pioneers in the field of petroleum refining. These men are among the more than 500 "Modern Pioneers on the American Frontiers of Industry" being honored this month in a nation-wide series of dinners from New York to San Francisco.

The dinners, sponsored by the National Ass'n. of Manufacturers, are in observation of the 150th anniversary of the American patent system and will give public recognition to outstanding contemporary inventors and research workers. The Chicago regional dinner takes in Illinois, Wisconsin, Indiana and Iowa, and is sponsored by the Illinois and Wisconsin Manufacturers Ass'ns., as well as by the national association.

Over 1000 nominations for Modern Pioneer awards were received by the N.A.M. as a result of a nation-wide search started eight months ago. The more than 500 award winners were selected from among these by a committee of distinguished scientists headed by Dr. Karl T. Compton, president of Massachusetts Institute of Technology. From among the local award winners, 19 will be chosen to be honored at a dinner in New York Feb. 27.

Oil men to be honored at the Chicago dinner include:

Cary R. Wagner, chief chemist and chairman of the refinery control board of Pure Oil Co. He has been issued over 20 patents and his work in the development of high pressure thermal polymerization of olefinic gases is said to be outstanding.

Dr. Thomas Hunton Rogers, associate director of Whiting Research Laboratory, Standard Oil Co. of Indiana, and Dr. Vandeveer Voorhees, development and patent department, Standard Oil Co. of Indiana. Discoveries by both of these men proved that, by adding small amounts of certain organic chemical substances to gasoline the formation of injurious substances can be prevented.

U. O. P. Men Honored

Joseph G. Alther, vice-president, Universal Oil Products Co. His outstanding invention is the Universal Equiflux furnace.

Carbon P. Dubbs, consultant, Universal Oil Products Co. He is being honored for inventing the method of producing gasoline from heavy oil, which bears his name, doubling the gasoline yield from crude oil.

Gustav Egloff, director of research, Universal Oil Products Co. Among his many inventions is multiple-coil cracking by means of which different fractions of petroleum of different characteristics can be cracked at the same time.

Prof. Vladimir N. Ipatieff, director of Chemical Research, Universal Oil Products Co. Outstanding among his inventions is the catalytic polymerization process for producing polymer gasoline from cracked gases.

Dr. Jacque C. Morrell, associate director of Research, Universal Oil Products Co. He has approximately 300 patents to his credit, among them inventions in daily use in the refining industry.

Otto Behimer of Oak Park, formerly associated with The Texas Co., whose achievements were discoveries incorporated in the Holmes-Manley cracking process.

Ask Dismissal of San Pedro Suit

N. P. N. News Bureau

WASHINGTON, Feb. 19.—Interior Department has asked the District of Columbia Court of Appeals to dismiss—for lack of jurisdiction— the cases brought by Raymond M. Hudson, Washington attorney, on behalf of a group of Californians seeking to compel granting of oil leases by the federal government in the valuable San Pedro field.

Industry Opens Fire On Federal Oil Bill

(*Continued from page* 5)

to assert that there was no attempt being made to conceal anything, which he said he inferred was in Mr. Wolverton's mind.

"That's so ridiculous that it seems ridiculous to even answer it," Mr. Wolverton retorted, assuring him that there was no such feeling on the part of the committee, "but," he added, "we do wonder if some witness couldn't tell us about this meeting."

Jack Blalock, Houston attorney, following Mr. Schoeppel, outlined a brief which his law firm had prepared to show that under court decisions and law (HR 7372) the federal control bill, "is unconstitutional."

He was scheduled to be followed by Ralph J. Schilthuis, Humble engineer.

George Hill Testifies

First industry witness to appear on Monday was George A. Hill, Jr., of Houston Oil Co. He said that the Cole Bill parades under the "false labels" of national defense and regulation of interstate commerce because the federal government lacks the constitutional power for such "seizure of control" as the measure proposes.

Mr. Hill condemned the bill as a trend toward a new conception of governmental policy, centralizing control at Washington. He said the bill was admittedly only "preliminary" legislation, designed to lead to more stringent control later.

Mr. Hill also filled out the program for the industry's presentation, naming Frank Buttram, president of Independent Petroleum Assn. of America as the witness who will discuss "land and royalty owners," Paul Greever, of Cody, Wyo., as representative of the Rocky Mountain Oil and Gas Assn., and E. H. Moore, independent producer of Tulsa and IPAA representative, as the witness who will discuss "wildcatting."

He also announced that President J. C. Hunter of IPAA will summarize industry testimony as the last industry witness.

A late Monday witness, Robert E. Hardwicke, chairman of American Bar Assn.'s Mineral Section, told the committee that "any possible advantages of Federal Control are more than offset by disadvantages," and praised the "record of achievement by the states and the oil industry" in the adoption of adequate conservation techniques.

Temporary absence of state laws in some states (Illinois and California), the Fort Worth attorney declared, does not justify federal regulation for all the states, adding that "it is reasonably certain that before very long remedies will be applied, with or without conservation laws" in these two states.

Representative Pearson, Tennessee, commented at this point that "if conditions in Illinois and California could be adjusted, we'd be a long way toward getting away from federal regulation."

Ickes Reports On Oil 'Waste'

WASHINGTON, Feb. 19.—Representatives of oil-producing states and the oil industry are preparing an answer to Interior Secretary Ickes' allegations of "waste" in oil and gas production, contained in a "supplementary report" filed with the Cole oil sub-committee.

Three exhibits are filled with the report. They are labeled:

"A. Present and recent instances of avoidable waste in oil and gas production—prepared by Geological Survey, Department of the Interior.

"B. (same title), prepared by the Bureau of Mines, Department of the Interior.

"C. Supplementary statement on natural gas wastage in Louisiana, Texas and Mexico—compiled from field reports of the Petroleum Conservation Division."

"Exhibit A" leads off with a "memorandum on examples of waste as defined by the Cole bill," and discusses the Kettleman Hills North Dome (Calif.), the Rodessa Field, (La.) the Cut Bank Field (Mont.), all New Mexico fields; the Jesse, Allen, Fitts, and Fox and Graham fields in Oklahoma; the Medicine Bow, Oregon Basin, North Dome Oregon Basin, Frannie, Garland, Osage, Lance Creek, and other fields.

"Exhibit B" includes instances of "waste" in Schuler, Village, Magnolia, Old South, Urbana, Smackover and Rodessa, Arkansas; West Montebello, Wilmington and other California fields, 11 Illinois fields, and a number of others, all prepared by the Bureau of Mines.

May Put Oil Activities Directly Under Ickes

By Teletype

WASHINGTON — Interior Department officials have approved the proposed transfer of all Bureau of Mines petroleum activities to the petroleum conservation division, directly under the Secretary, it was learned today. An executive order from the White House will be required to make the transfer effective.

Mo-Pac Delays Decision

ST. LOUIS, Feb. 20.—Missouri Pacific railroad, which had promised an announcement today on its proposal to reduce freight rates on petroleum products along its lines 9.5c per cwt. (0.6c per gal. on gasoline), has withheld a decision pending a meeting Feb. 23 at Chicago of Western Assn. of Railroad Executives which will consider the Mo-Pac reduction again.

Former Oil Man Will Study TNEC Data on Oil

WASHINGTON — Secretary of Commerce Hopkins has appointed Sumner Pike, Lubec, Me., former Texas oil man, to analyze oil data presented to the Temporary National Economic (Monopoly) Committee and make a report to him. Willard Thorp continues as the Commerce Department representative sitting on TNEC.

Illinois Production Tops 400,000 Barrels

By Teletype

TULSA, Feb. 20.—Crude oil production in Illinois passed the 400,000-barrel mark the past week, with daily average being 408,000 bbls. up 24,000 barrels from the previous week. Illinois is now less than 20,000 bbls. behind Oklahoma, third ranking oil producer.

The new oil pools in the state accounted for the bulk of the daily output with the Salem Field producing approximately 250,000 barrels, and the Lowden Pool being stepped up approximately 9000 barrels daily.

The upward swing in production, according to many observers here, has been due to increased pipeline outlets as much as to the new production from the Devonian Sand. Several pipeline companies are reported increasing line capacities by looping. Another company is constructing a new line eastward from Salem.

One major operator is reported to be shutting in production from the Benoist and McClosky horizons and taking oil now from the lower Devonian producing structure.

Ickes Off Air, Doesn't Let Up In War on Oil

N. P. N. News Bureau

WASHINGTON, Feb. 19.—Interior Department's radio series, "What Price America," including the much-criticized "propaganda" program for federal oil control, are off the air —temporarily, at least. But Secretary Ickes carries on.

Speaking before the George Washington University medical school alumni here Feb. 17, Secretary Ickes declared that in the oil industry "we have a record of extravagant waste and ruthless exploitation hardly surpassed anywhere. It is a messy story," he added.

Mr. Ickes then told of a letter that reached his office, a few months ago, reading:

"Dear Uncle Sam: I am only 8½ years old, but the waste of oil that is going on is terrific. And I depend on you to help us citizens to stop it."

If the Interior Department's broadcasts on conservation are resumed, it is likely that Columbia Broadcasting System will require that the script be prepared under CBS supervision. Cessation of the programs on their first anniversary coincided with CBS officials decision to put restrictions on use of "free time" given government agencies.

Meanwhile, Russell B. Brown, of Independent Petroleum Assn. of America, is preparing to answer Interior Department's oil broadcasts, charging they are "propaganda for federal oil control," in his testimony later this week before Cole oil subcommittee.

Texaco Builds New "Gas" Line

NEW YORK—The Texas Co. is building a 6-inch gasoline pipeline from Lawrenceville, Ill., where its subsidiary, Indian Refining Co., has a refinery, to Evansville, Ind., a distance of about 55 miles.

Good News—And It's About Taxes

WASHINGTON — Good news sometimes comes out of the Internal Revenue Bureau:

Federal gasoline tax collection in January amounted to $19,228,329, or nearly 20% above January a year ago. Lube oil tax receipts were also up, from $2,199,020 to $2,615,468.

The Editor's Page—

Readers Comments and Opinions will be much Appreciated by—WARREN C. PLATT, Editor and Publisher, Penton Building, Cleveland, O.

Cash Buyer Seeks 'Surplus' Gasoline Stocks

And Cannot Find Them, Except in the 'Statistical Tables'

Evidence that the "surplus" gasoline stocks are not the kind of "surpluses" that the oil industry so generally has been saying they are, is provided by one of the largest refiners.

Vice President Kennedy of Continental Oil Co., after a week's effort to try and buy sizeable quantities of gasoline from this much talked of "surplus", announced that he could find but a few stray cars and that all the rest of the "surplus" was being held by its owners who said they "needed" it.

The Continental's buying effort was not a charitable one to raise the price but to get gasoline that the company needs because it has had to greatly reduce its own refinery operations to make repairs and add more modern equipment so that the company is now 27% BELOW last year in its gasoline storage at its big plant at Ponca City.

This is a strange sort of "surplus" indeed if it is "breaking the market", because it is "statistically way in excess" of some one's standard for "model stocks" at this time of the year, and yet a company with perfectly good cash cannot find any of it to buy?

While a major company is trying to find some of this alleged price-breaking "surplus" gasoline stocks to buy it, one of the largest stock brokerage houses in the country issued a current statement to its customers and the public press as to how the "excess" of stocks has "broken" the gasoline market ½c per gal., that this has "virtually eliminated any profit," that this may cause "unsatisfactory" earnings in the first quarter of 1940 and "may be transmitted to crude prices before the year is over."

Again we suggest that it would seem to be high time for the industry to overhaul its statistical methods and make them report conditions as they actually are today and further, to see if the industry cannot so set up its statistics as not only to make management realize more keenly its responsibility for "surplus" stocks but to put the psychology of the price situation back into management's hands instead of leaving it to a lot of figures and a very evident false conception of those figures.

At the moment, the evidence seems to stand very much as disproving that there are any "surplus" gasoline stocks. So far NPN has been unable to locate a company that admits to any. There is no evidence as to how fair and accurate the mythical goal of "reasonable stocks" is. Furthermore, we submit, the evidence still shows that these stocks, whatever they are, appear very clearly to be in the custody of the refining departments of the oil companies and therefore they are not "on the market." And last these stocks cannot "get on the market" unless management transfers them to the sales departments. Even then MANAGEMENT will have the responsibility of instructing the sales departments whether to sell these stocks ONLY AT THE MARKET or to dump them regardless of price.

There is enough price difficulty in the tank car and retail markets these days due to the continued big development of the new Illinois field, now producing almost as much as the whole state of Oklahoma, the continued rapid development of low-cost barge and truck transportation and the great growth of so-called "private" or "local" brands that generally are selling at a differential under the prices of "nationally advertised" brands. Certainly the industry should not let a mysterious "surplus", that seems to exist only in statistics and that a perfectly solvent buyer with hard money is unable to locate, add further to the industry's price difficulties.

Abandons Small-outlet territory and 'Iowa Plan'

Management, which is carefully PLANNING for lower costs and better profits, is being used these days by a young oil marketer we met the other day and whose identity probably had best be left unrevealed.

His company had not been making the money it should considering its quite considerable volume of business. As the result of a study, the company decided that it was trying to serve too great a territory much of which had too little gallonage possible per square mile. A large number of the company's outlets and its dealers were entirely too small, but a few thousand gallons a month at the best, with a small ratio of oil sales possible and the customers of too modest circumstances to replace batteries or tires until they had gone far beyond any normal life.

The company began withdrawing from the small gallonage territory and outlets and reinvesting its time and money in modern facilities in the more populous areas. To make sure that it got the maximum that good management could get out of these markets it did cultivate, the company tossed over the "Iowa plan" entirely and went back to operating its own stations. Under owner-management the company developed its stock and sales effort for batteries, tires and other accessories, and then saw to it that it did a thorough job of merchandising in these better communities. The result already is, as this marketer put it, they can make much more money out of a $25,000 or $30,000 investment in a modernly built and equipped service station in the more populated areas than in the same amount of money invested as heretofore in the small outlets out in the sparsely-settled country districts.

The revamping of the company's business—modernizing it with the best of management ideas as well as with modern equipment—will be continued until, it says, every outlet and every piece of equipment is making a reasonable percent of profit.

The districts from which the company is withdrawing are outlying, fair to very poor farming country that in all probability will not grow in population, nor in gasoline gallonage, for the next 25 or 50 years and maybe never. If one company had all such poor consuming country exclusively it never could get very rich because the people there have a limited number of dollars per year to spend, which number will probably not increase. Even a "monopoly" would be hard put to it to figure how to make money off of such country because it would have to seek hard for a price which would be within the means of the relatively few car owners and which at

the same time would permit of the sale of a large enough volume to keep the outlets alive.

All this re-arranging of marketing territory is not new in the oil industry. We know that major companies have been doing it for many years and have been teaching their marketers how to analyze and regroup their customers. But, while the idea is not new, it is not put into use as vigorously as it should be and, too, as with all other good business ideas, it is also easily forgotten or overlooked for long periods.

If every oil company, big and little, carefully and intelligently put this idea that this young oil marketer is today adopting, into effect, this oil industry certainly would be in a much more stable and profitable condition.

Governor Compliments Marketers' Good Management

Good management of oil marketing facilities is what brings the tourist "crop" to South Dakota, is another way of putting what the governor of that state said to members of the state's Independent Oil Men's Association the other week.

Governor Bushfield said it was the "good service" rendered by the marketers of his state to the customers that brought the business. Service is a result of management and it is only when the management is good, when it is active and on the job every hour of the day, that such service becomes "good."

The industry does a lot of talking about service stations and what goes on at them. It gets up fine plans for conduct at those stations, whether company operated or dealer. But, it has long seemed to us of NPN that the real origin of this service has rather been lost sight of. That origin is in management, the marketer and manager back of the bulk station, of the division and district, back of the string of stations, yes even back of the "independent" dealer.

Management plans to have the right equipment at the right place and at the right time, it plans and buys that equipment that will get the most business for the least cost. Management hires and trains the right men as employes and not only tells them what to do but how and when to do it and then sees that they do it. Management supplies the modern sales tools that those truck and station men use and then, if it is good management, it calls often and regularly enough to see that those tools are properly and successfully used.

This "management" is all that lies, generally unseen, behind the "service" to the public that Governor Bushfield spoke of. When the governor praised that "service" in his state, he praised the "management" of those oil marketing men who are responsible for it.

Our compliments also to Joe E. Adrian on his first annual meeting as association secretary (he took office, April 15, 1939). He brought out a paid registration of 346, a record in the history of the 21-year-old South Dakota association. Mr. Adrian was formerly manager of the state motor fuel tax division, and had, therefore, an intimate acquaintance with the oil men.

Our thanks to South Dakota's governor for his commendation of oil marketing management, and our welcome to the state's new secretary, Joe Adrian.

Around THE MID-CONTINENT

. . . By ALLEN S. JAMES

'Ed' Taylor Turns Over Reins of K.O.M.A. To Fred Kistler of Coffeyville

The board of directors of the Kansas Oil Men's Assn., at a business session at the 26th annual convention in Wichita, Kans. the past week, honored the retiring president, E. M. Taylor, Home Oil Co., of Kinsley, Kans., by naming him chairman of that board.

"Ed" Taylor had requested at the annual business session of the association that his name not be placed in nomination for the presidency for another term. He had served three terms already, he explained, and felt that it was time for someone else to have the honor and the responsibility.

The membership elected Fred Kistler, head of the Kistler Oil Co., Coffeyville, Kans., president for the ensuing year and added three new members to the board. The board elected "Ed" Taylor chairman.

"Ed" Taylor has done a lot for the Kansas organization. He took the presidency at a time when membership had dropped to a very low mark; when the treasury was so bare some of the members had been paying more than their dues, and he and his board and C. E. Holmes, the secretary, literally lifted the association back to the standing it had occupied many years ago.

Mr. Taylor left the presidency after a new record attendance had been set—registration desk run out of badges, something that had never happened before. He left with the organization's treasury in good shape.

Fred Kistler

E. M. Taylor

Fred Kistler, who takes over, has been a marketer in Coffeyville, Kans. for 16 years. He believes in applying to his business sound and fundamental business principles. He knows from his records just where he stands at all times.

Mr. Kistler is proud of his organization. He says his business belongs to him and his boys and girls—meaning his employes. He has a lot of fun being an oil man.

Next to running his oil business Fred Kistler gets the most fun out of buying old houses and remodeling and modernizing them. He seems invariably to have some piece of remodeling under way that takes part of his time. He says he never makes any money that way—but he gets a world of fun and relaxation.

* * *

Golden Anniversary Celebrated at Kinsley

We learned while at the K.O.M.A. convention that the Taylor clan—of which Ed Taylor is a member—is celebrating its golden business anniversary as Kinsley, Kans.

The Taylor business, called "Taylor & Sons", was founded at Kinsley in 1890, first as a real estate firm. "Ed" Taylor's father, J. D. Taylor—who had been brought to Kinsley as a boy by his parents when the Santa Fe railroad had reached only a short distance beyond that western Kansas town—was the first "son" in the business.

"Ed" Taylor and his brother, H. D., eventually joined their father, and several years ago "Ed" Taylor branched out as manager of the Home Oil Co.

Then into the business came "Ed" Taylor's son, L. M., who now has a son, Larry G., who will be a "son" in the business as soon as he can take his share of responsibility.

That will make four generations of Taylors in the business.

Oil Transportation News

Latest developments in freight rates, legislation, regulations, and new construction affecting transportation of petroleum products by truck, barge, tanker, pipeline, and railroad.

Rails Cut Short-Haul Rate In Midwest; May be Snagged

CHICAGO, Feb. 19.—Reduced rail rates on petroleum shipped from refineries, pipeline and marine terminals in Nebraska, Iowa, Minnesota, Wisconsin and Illinois have been approved by a sub-committee of Western Trunk Lines Committee. New rates to destinations in Iowa, Nebraska, Minnesota, North and South Dakota will be based on a mileage scale, which is said to be "truck competitive."

All but one of the pipelines involved, as well as many of the marine terminal and refineries, have been shipping mostly by rail. Apparently, they threatened to over to for-hire transporters unless the rails made their rates "truck competitive."

Point-to-point rates based on this mileage scale average out about five cents a hundredweight (0.033 cent a gallon on gasoline) below present rates. New rate scale is scheduled to take effect after the tariff has been published and 30 days statutory notice given.

Snag Looms

Possible delay in publishing the new rates was seen when it was requested that Southwestern Freight Bureau consider the proposal. When the reduced rates were being considered by the W.T.L. Committee last week, a representative of a southwestern refiner opposed the rate cut unless reductions were made into the same territory from southwestern refining areas.

It was believed, therefore, that since reduced rates from northern terminals would heighten the competitive advantages held by pipeline and water shippers, that Southwestern Freight Bureau had interested itself in the proposed rates from that angle. No ruling has been made on the request.

The reduced scale of rates affecting shipments from northern terminals to Iowa, Nebraska, Minnesota, North and South Dakota destinations begins at 0.33 cents a gallon shipped up to 30 miles and ranges upward to 3.432 for points 500 miles apart, with the following "in-between" rates:

50 miles	0.396c
75 miles	0.495c
100 miles	0.627c
125 miles	0.792c
150 miles	0.924c
175 miles	1.023c
200 miles	1.155c
250 miles	1.419c
300 miles	1.914c
350 miles	2.409c
400 miles	2.772c
500 miles	3.432c

Reduced Rates Sought From Cape Girardeau

ST. LOUIS—Lower rail rates on petroleum and products shipped from Cape Girardeau, Mo. to Missouri and southern Illinois destinations have been proposed. Reduced rates would apply from a marine terminal now under construction at the Mississippi River point, it was said.

Shipper asks a scale of truck-compelled Missouri intrastate rates similar to those now in effect in Oklahoma and Kansas. The proposal would reduce by more than half the present rates from Cape Girardeau to southern Illinois. Present and proposed rates in cents per gallon of gasoline shipped from Cape Girardeau to representative Southern Illinois destinations are shown below.

From Cape Girardeau to:	Proposed	Present
Anna	0.495	1.320
Cypress	0.396	1.320
El Dorado	0.660	1.716
Golconda	0.726	1.518
Ridgeway	0.792	1.848

Truck's Advantages Again Cited by ICC

N. P. N. News Bureau

WASHINGTON, Feb. 19. — Granting of an Interstate Commerce Commission permit to a trucker to haul petroleum products to certain Oklahoma points, thus enlarging his scope of operations, will permit distributors at those points to handle furnace oil for their patrons, whereas if they were to continue to ship by rail they could not furnish this product because of small storage capacity, is revealed according to ICC's report on application of Earl Bray, Cushing, Okla.

"By obtaining petroleum products in small quantities the jobbers will be able to stock slow-selling products which they have heretofore been unable to handle for lack of storage space," ICC report said. "One of them has had calls from its customers for furnace oil but has been unable to supply this demand because of the lack of storage facilities for carload rail shipments."

Commission held, as it has in similar cases, that this was an operation in which the "inherent advantages of truck transportation" were apparent.

ASTM Program Features Talks On Fuels, Lubes

CLEVELAND, Feb. 19. — Trends in the significant properties of four principal types of volatile liquid petroleum fuels —motor and aviation gasolines, domestic furnace oils, and high speed diesel fuels—will be discussed at the spring meeting of the American Society for Testing Materials in Detroit, March 6. A paper on "Trends in the Properties of Volatile Liquid Fuels" by D. P. Barnard and A. H. Fox, Standard Oil Co. of Indiana, will be presented.

Particular reference will be made to approximate dates at which important properties of each fuel type became of sufficient interest to require recognition in the manufacture of the product and the development of standardized tests for use in quality control. The data, which will be presented principally by means of charts, will be applied to the prediction of future trends.

"Developments in Lubrication", a paper by J. P. Stewart, R. C. Moran, and O. M. Reiff, Socony-Vacuum Oil Co., will be presented following the fuel discussion at the afternoon session. The discussion on lubrication developments will cover special chassis and gear lubricants, the development of crankcase lubricants and also will discuss in some detail the use of additives for crankcase lubricants.

Preceding these speakers on the afternoon session will be Miles D. Catton, Portland Cement Ass'n., who will describe "Advances in the Use of Concrete in Transportation" and Prevost Hubbard, The Asphalt Institute, giving "Recent Developments in the Use of Asphalt for Transportation Purposes".

The morning session will be devoted to automotive materials. "Exhaust Valve Materials for Internal Combustion Engines" is being prepared by S. D. Heron, Ethyl Gasoline Corp., and O. E. Harder and R. M. Nestor, Battelle Memorial Institute. "Selection and Application of Automotive Steels" is in the hands of A. L. Boegehold, General Motors Corp., W. H. Graves, Packard Motor Car Co., and E. W. Upham, Chrysler Corp. S. M. Cadwell, U. S. Rubber Co., will speak of the "Rubber of Tomorrow".

Shell Plans Stockton Terminal

LOS ANGELES, Feb. 17. — Frontage of 500 ft. on a 12-acre tract along the deep water channel, in Stockton, Calif., was recently acquired by Shell Oil Co. for construction of a proposed $125,000 water terminal.

Tentative plans for the new terminal call for a dock, loading racks for both rail and truck shipments, several storage tanks, a warehouse, and an office building. Upon completion, the company will transport products by barge from Martinez refinery for distribution between Lodi and Merced. Present sales depot of the company will be abandoned upon completion of the new terminal.

Ickes Opens Up Lands for Lease

WASHINGTON, Feb. 19.—Interior Secretary Ickes has announced that more than 3,800,000 acres of the public domain in 15 western states soon will be opened for lease by the government to prospect for oil and gas. The land consists of tracts formerly held under oil and gas prospecting permits which the owners failed to exchange for new five-year leases, as required by law in order to continue their right to prospect the land.

ICC Calendar

DECISIONS

Clark Oil Co., Inc., Danville, Va. (MC 5727, Sub. 2) Permit granted for operation as a contract carrier of petroleum products from Bellwood, Va., to Leaksville, N. C. over a specified route.

Columbia Basin Transportation Co., College Place, Wash. (MC 86970, Sub. 1). Certificate granted to operate as a common carrier of liquid petroleum products from specified points in Wash. and Ore. to points in certain counties in Idaho and Wash., over irregular routes.

HEARINGS

No hearings scheduled for week beginning March 6 and ending March 13.

California Crude Still Down, Three Majors Hike Fuel Oil

N. P. N. News Bureau

LOS ANGELES, Feb. 17.—Restoration by Shell Oil Co., Feb. 9, of the 90c San Pedro base price for fuel oil, which had been in effect from March 10, 1936, to Dec. 31, 1939, was followed by Tidewater Associated Oil Co., Feb. 12, by General Petroleum Corp., Feb. 14, and Union Oil Co., Feb. 16. At the close of the week only majors that had not announced similar advances were Richfield Oil Co., The Texas Co.., and Standard Oil Co. of California.

When California Standard reduced crude prices 4c to 15c per bbl. on Feb. 1, it cited too-low fuel oil prices as a contributing factor. But there have been no indications so far that the Standard would restore crude prices, now that fuel oil prices have strengthened. Only one company met the Standard's crude price cut—Richfield Oil Corp.

Reports varied as to the going price for crude not covered by contracts based on Standard postings, and also as to the quantity of oil that was not so covered. Relatively little desirable, refinable crude was believed to be in this latter category and this increased the importance attached to Standard's attitude.

No authoritative statements were issued by crude purchasing companies as to their intentions but unofficial comments were almost unanimous in forecasting that if, and when, crude prices were advanced the light, refinable oil would probably be advanced to approximately its former level but that heavy oils would receive little benefit.

Output Hike Explained

Proration officials called attention to what they considered wrong interpretations of current production figures, which show an increase of 9169 barrels in the daily average output of the state during the first half of February, as compared with the corresponding period of January. In the past, Midway-Lake View operators have shut in their wells for the last two days of one month and the first 10 days of the following month. Beginning Feb. 1, these operators reversed their schedules and opened up their wells for the first two weeks and will shut in for the third and fourth weeks. To make a correct comparison of the two half-month periods, account must be taken of the 6674 barrels daily average that was produced by Midway-Lake View in the first half of February and not in the first half of January.

Supply and Demand Balance, Tanker Rates Hold at Peak

N. P. N. News Bureau

NEW YORK, Feb. 20. — Supply of boats available in the open domestic charter market, and demand for bottoms continued well balanced, according to reports in the boat market Feb. 20, and for the sixth consecutive week domestic tanker rates have continued to hold without change at the all-time high levels reached the first week of January.

No fixtures of "clean" bottoms were reported done in the market the past week. Last paid, for gasoline, kerosine, and No. 2 fuel oil were 66, 69 and 72 cents per barrel, respectively for Gulf to North Atlantic movement. Owners were said to be still asking these prices to nominally 2 cents per barrel higher.

Domestic rates for "dirty" boats also continued to hold at the 53 and 60 cents per barrel prices for light and heavy crude or fuel, respectively, also reached early in January.

While the fixture of one vessel at 62 cents for heavy crude from the Gulf to North Hatteras was reported to have been done last week, reports were that this charter was a "special", and the additional 2 cents was to compensate for the additional expense of keeping the cargo under heat. Two other fixtures at 60 cents for heavy crude or fuel from the Gulf to the eastern seaboard, also were reported to have been done last week.

While vessels of belligerent nations, of course, were still not available in the open charter market, no reports of fixtures or rates on neutral vessels for shipments from the Gulf or South America to neutral foreign ports could be had in the boat market this week.

Tank Truck Ban in Connecticut Causes Headache To State Building of Service Station

By Teletype

HARTFORD, Conn., Feb. 19.—Connecticut Attorney-General Francis A. Pallotti's literal interpretation to the prohibition against commercial vehicles on Merritt Parkway last month, banning even gasoline trucks, has come home to roost.

The state is now building a gasoline station at New Canaan, and to obey the law, the state has designed the station in two identical units, one on either side of the Parkway, and connected by a gravity feed line.

One of the units of this dual-unit station is accessible to a side road—where gasoline trucks are allowed—and the gravity feed line services the tanks of the opposite unit. So far, this is the only gasoline station on the approximate 40 mile stretch between Stratford, Conn., and the Connecticut-New York state boundary.

Lease will be offered to oil companies within two or three weeks, and another station "has been proposed," Commissioner of Highways Cox said early this week.

New Refinery Planned For Santa Maria Field

N. P. N. News Bureau

LOS ANGELES, Feb. 17.—Construction of a new refinery in the Santa Maria district will be commenced immediately by the Mid-Coast Oil Co., headed by H. Paul Grimm, formerly California oil umpire and more recently an official of Pacific Western Oil Co. and Bolsa Chica Oil Co. Leo Chandler and John Black are associated with Mr. Grimm as directors of the new company.

Mr. Grimm states that the refining system to be installed in the new plant has been especially designed to produce high-grade gasoline from Santa Maria crude, and that the system has already been satisfactorily tested on similar crudes.

When completed, in about two months, the refinery will have a capacity of from 3000 to 5000 barrels daily. Estimated cost of site, buildings and equipment is placed at about $250,000.

Oil Accountants to Banquet Top-Flight 'Execs'

N. P. N. News Bureau

TULSA, Feb. 19.—Top-ranking executives of 62 oil companies are going to be banquet guests of the Petroleum Accountants Society of Oklahoma the night of Feb. 28 at the Mayo hotel in Tulsa.

The executives will be from companies which are represented by membership in the society. The meeting has been named "executive night" and will take the place of the society's regular February meeting.

Gov. Leon C. Phillips of Oklahoma will be guest speaker, and the only speaker, according to the announcements being sent to the society's members. While the governor's subject has not been announced it is generally believed he will discuss some of his experiences in connection with the Cole subcommittee hearings in Washington.

Drilling Increase Seen For Mississippi in '40

NEW YORK, Feb. 17.—An increase in drilling in 1940 is looked for in Mississippi, newest oil producing state, H. M. Morse, supervisor of the Mississippi Oil and Gas Board, reported at the annual meeting here of the Petroleum Division of the A.I.M.E. A number of blocks of acreage taken in the Tinsley field of Yazoo county, call for wells to be drilled with the year, he said.

First producing well in this field was completed at 4567 ft. on Sept. 13, 1939. By the end of the year, 9 producing wells had been drilled and one dry hole. Two producing sands have been found in the Eutaw and a third in the top of the Tuscaloosa formation, called the Woodbine in Louisiana and Texas, he stated. Faulting was said to be a major factor of this field.

Towards the end of 1939, 53 geophysical crews were active in the state, particularly in the western section. The state oil and gas board promulgated a 40-acre spacing rule in the Tinsley field as an aid to operators and landowners, Supervisor Morse reported. A minimum of 1600 feet of surface casing was first called for but the board later reduced this to 600 feet, since the gas pressure was found not to be excessive, he stated.

Nine Out of Ten Gallons of Gasoline in Storage

East of California, 90% of Stocks Are Held by Larger Oil Companies

By N.P.N. Staff Writer

AUSTIN, Tex., Feb. 16.—Current gasoline and crude oil inventories of most major oil companies operating east of California were placed in the record of the Texas Railroad Commission's hearings here today. Reports were received from 21 companies, including three independent refiners.

The statistical reports indicated that:

Approximately 80% of total gasoline stocks east of California are held by these 21 companies.

Their stocks are 5,505,000 bbls. above a year ago.

Statisticians of these companies gave estimates ranging from 77,000,000 to 87,000,000 bbls. as "proper economic" level for gasoline stocks as of April 1 (American Petroleum Institute estimated total U. S. stocks at 91,649,000 bbls. on Feb. 10).

Eighteen of these companies have a total of 167,672,000 bbls. of crude in storage, but only 63,574,000 bbls. or about 40% is available for immediate movement from place to place.

Estimates of "proper economic" level for crude stocks were mostly in range of 225,000,000 to 235,000,000 bbls. (U. S. Bureau of Mines reported total crude stocks at 239,380,000 bbls. on Feb. 3).

'In Strong Hands'

If stocks held by the Standard of New Jersey, Mid-Continent Petroleum Corp., Standard of Louisiana, Standard of Ohio and other large companies operating east of California were added to those covered in reports to the Texas commission, it would show that 90% or better of gasoline stocks in this area were "in strong hands."

This statistical rodeo was not as colorful as others held by the Texas Railroad Commission. Perhaps it was because Col. E. O. Thompson, commission member, was absent because of illness. The questionnaires about stocks were sent out over Col. Thompson's signature. He has been the chief examiner of major company executives placed on the witness stand at previous hearings. The questionnaire replies were placed into the record of what otherwise was a routine proration hearing. No company executives were called to the stand.

But the questionnaires disclosed much interesting data on stock positions of these companies, especially in view of the current debate about "excess" stocks.

The commission asked for an opinion as to the proper economic levels of gasoline stocks for U. S. on April 1. There was a difference of approximately 10,000,000 bbls. in the estimates. The lowest was 77,000,000 bbls. and the highest 87,000,000 bbls. The American Petroleum Institute estimated total stocks of finished and unfinished gasoline on Feb. 10 at 91,649,000 barrels. This was approximately 10,699,000 barrels higher than the total estimated stocks in the United States a year ago.

East of California Only

From Table No. 1 can be obtained a fairly good idea of who has a sizeable portion of the so-called "excess" gasoline. It will be noted that the 21 companies listed have total stocks of finished and unfinished gasoline amounting to 58,586,000 barrels at the present time. These stocks are all east of California, the companies having subsidiaries on the west coast having excluded them from their reports.

80% Excluding California

Deducting California gasoline stocks—estimated at 18,300,000 bbls. as of Feb. 10, these 21 companies held 80% of the total gasoline stocks east of California. In other words, these 21 companies held 58,536,000 bbls. of the total 73,349,000 bbls. stored east of California.

From the table, it will be seen that companies showing larger inventories had increases totaling 6,699,000 bbls. The total decreases amounted to 1,194,000 bbls., giving a net increase for all the companies listed of 5,505,000 bbls.

During the period between March 31 and Dec. 1, 1939, five of the companies listed increased gasoline stocks. (See Table No. 2.)

It will be noted from the table, however, that the total increase in gasoline inventory in the 60-day period from Dec. 1, 1939, and Feb. 1, 1940, was 8,130,000 barrels, with three companies failing to add to their stocks.

Estimate June 1, 1940, Stocks

Five of the companies which gave a June 1, 1940, estimate of motor fuel stocks expect to have inventory lower at that time than they were on Feb. 1.

It will be recalled that at the big hearing in Austin, Aug. 28, and while the six-state production holiday was in force, the commission asked companies to estimate what their gasoline stocks would be on Dec. 1.

The estimates, by companies replying at that time are compared with their reports of actual stocks on that date as reported in the most recent questionnaire and the comparison has been listed in Table No. 3.

It will be noted that three companies reached Dec. 1 with stocks below the estimates they had made back in August, while all the others were above their estimates. Considering the amount of gasoline involved, the Standard Oil Co. of Indiana probably came closer to hitting its estimate than any other company.

Questioned on Crude Stocks

The railroad commission did not confine its questionnaire to refinery operations. It also asked for a considerable amount of statistical data on crude oil stocks. It wanted to know, for example, the total crude stocks on Feb. 1, 1940, on Dec. 1, 1939, and March 31, 1939.

The commission also wanted to know how much of the crude stocks each company had that was immediately available in condition for dispatch, i. e. that can be moved from place to place at will. This question naturally required that the companies segregate line fill, tanks bottoms and other "fixed" crudes from the total stocks.

A tabulation of the reports to these questions, is shown in Table No. 4. It will be seen

Table No. 1—Stocks of Finished and Unfinished Gasoline Held by Companies Reporting to Texas Railroad Commission at Feb. 16 Hearing, Together with Change in Stocks Since the Same Period a Year Ago

(Figures in Thousands of Barrels)

Company	Present Stocks	Change From Year Ago Increase	Decrease
Shell Oil Co., Inc.	4,977	....	89
Gulf Oil Corp.	5,609	654	....
Tide Water Associated	1,136	....	258
Sun Oil Co.	2,885	980	....
Humble Oil & Refining Co.	2,678	398	....
Pan American P. & T. Co.	2,620	31	....
Atlantic Refg. Co.	2,024	160	....
Consolidated Oil	4,330	521	....
Socony-Vacuum	7,798	1,774	....
Standard of Indiana	5,529	144	....
Texas Co.	7,976	405	....
Cities Service Oil Co.	2,801	225	....
Ohio Oil Co.	249	....	248
Phillips Petroleum Co.	2,460	803	....
Skelly Oil Co.	553	94	....
Continental Oil Co.	1,395	....	229
Pure Oil Co.	1,670	....	326
Bareco Oil Co.	266	44	....
Taylor Refining Co.	658	442	....
Southport Pet. Co.	295	....	44
Republic Oil Refg. Co.	678	24	....
TOTAL	58,586	6,699	1,194
Net Change	.....	5,505	....

Table No. 2—Comparison of Gasoline Stocks for Three Dates, Together with Change in Stocks Between Dec. 1, 1939, and Feb. 1, 1940, and Estimated Stocks on June 1, 1940

(Figures in Thousands of Barrels)

Company	Stocks 3-31-39	Stocks 12-1-39	Stocks 2-1-40	Change 12-1-39 to 2-1-40	Est. Stocks 6-1-40	Change Est. to 6-1-40 from 2-1-40
Shell Oil Co.	5,421	4,473	4,964	+494	5,278	+314
Gulf Refng. Co.	5,136	5,207	5,409	+202	5,580	+171
Tide Water Assoc.	1,502	876	1,136	+260	1,213	+ 77
Sun Oil Co.	2,350	2,205	2,820	+615	3,320	+500
Humble O. & R. Co.	1,861	2,857	2,678	—179	2,850	+172
Pan American	2,941	1,992	2,620	+628	2,500	—120
Atlantic	2,062	1,885	2,024	+139	2,050	+ 26
Consolidated	4,075	3,454	4,330	+886	4,694	+364
Socony-Vacuum	6,564	5,968	7,798	+1,830	9,670	+1,872
Indiana Standard	5,985	5,080	5,529	+449	6,243	+714
Texas Co.	7,916	6,290	7,976	+686	8,085	+109
Cities Service	2,687	2,821	2,801	— 20	2,400	—401
Ohio Oil Co.	535	102	236	+134	307	+ 71
Phillips Pet. Co.	2,070	2,021	2,460	+441	2,639	+179
Skelly Oil Co.	728	360	549	+189	550	+ 1
Continental	1,609	1,166	1,395	+129	1,361	— 34
Pure Oil Co.	2,245	1,578	1,670	+ 92	2,050	+380
Bareco Oil Co.	236	225	262	+ 37	....	....
Taylor Refg.	383	572	658	+ 86	350	—308
Southport Pet.	294	248	291	+ 43	200	— 91
Republic	745	749	653	— 96	(Lower)	....
TOTAL	57,345	50,129	58,259			

Held in 'Strong Hands', Texas Hearing Indicates

Table No. 3—Comparison of Actual Stocks of Finished and Unfinished Gasoline Stocks on Dec. 1, 1939, with Estimate of What Stocks would be in that Date, as Made at Texas Railroad Commission Hearing Last Aug. 28

(Figures in Thousands of Barrels)

Company	Estimated Stocks	Actual Stocks	Difference
Shell Oil Co.	4,000	4,473	+ 473
Tide Water Associated	750	876	+ 126
Sun Oil Co.	1,800	2,205	+ 405
Pan American P. & T. Co.	1,850	1,992	+ 142
Atlantic Refining Co.	1,526	1,885	+ 259
Consolidated Oil Co.	2,700	3,454	+ 754
Socony-Vacuum Oil Corp.	5,615	5,968	+ 353
Standard of Indiana	5,106	5,080	— 26
Texas Co.	5,244	6,290	+ 1,046
Ohio Oil Co.	197	102	— 95
Phillips Petroleum Co.	1,463	2,021	+ 558
Skelly Oil Co.	350	360	+ 10
Continental Oil Co.	1,081	1,166	+ 85
Pure Oil Co.	1,770	1,578	— 192
Bareco Oil Co.	137	225	+ 88
Republic Oil Refg. Co.	668	749	+ 81

Table No. 5—Comparison of Crude Stocks on Feb. 1, 1940, with Those at Time of Six-State Production Holiday in August, 1939

(Figures in Thousands of Barrels)

Company	Stocks 2-1-40	Stocks Aug. '39	Change Since Shutdown
Shell Oil Co.	6,524	5,572	+ 952
Tide Water Associated	3,166	3,100	+ 66
Sun Oil Co.	4,485	6,655	—2,170
Humble Oil Refg. Co.	11,502	7,629	+3,873
Pan American P. & T. Co.	1,871	2,358	— 487
Atlantic Refg. Co.	4,374	4,568	— 194
Consolidated Oil Corp.	10,250	15,200	—4,950
Socony-Vacuum Oil Corp.	25,059	24,290	+ 769
Standard of Indiana	29,460	34,220	—3,760
Texas Co.	23,492	26,743	—3,251
Cities Service Oil Co.	5,468	6,264	— 796
Ohio Oil Co.	9,375	9,945	— 570
Phillips Petroleum Co.	5,406	5,882	— 476
Skelly Oil Co.	354	520	— 176
Continental Oil Co.	7,821	8,926	—1,105
Pure Oil Co.	3,922	4,000	— 78
Barnsdall Oil Corp.	708	614	+ 94
Republic Oil Refg. Co.	1,317	522	+ 795

that, while the companies reported they had on Feb. 1 a total of 167,672,000 barrels of crude oil, they actually had immediately available for movement at will only 63,574,000 barrels.

40% Is Immediately Available

Three of the companies listed did not report the amount of crude available. By deducting the total stocks held by these three companies from the grand total of 167,672,000 barrels, it is calculated that the companies reporting had only 40.5 per cent of their crude stocks available for movement from place to place.

At the time of the Aug. 28 hearing the commission asked the reporting companies for their crude oil stocks as of that date. It will be recalled that some of the companies said they were "a little long" right then on crude; others were "a little short" and still others that they might have to work off a considerable amount of oil in the near future.

In order to show what actually occurred in the period between the Aug. 28 hearing and Feb. 1, the stocks given in August and the Feb. 1 stocks are compared in Table No. 5.

It will be noted that some of the major companies have made sizeable reductions in their stocks since the historical six-state shutdown in August, while others have increased stocks. This is notably true of Humble Oil & Refining Co., which, according to a statement of President H. C. Weiss at the Aug. 28 hearing, was short of crude at that time. Humble, Table No. 5 shows, increased crude stocks 3,873,000 barrels from August, 1939, to Feb. 1, 1940.

"Economic" Crude Stocks

The commission also asked the companies to estimate what they considered the proper economic crude stock level for the nation on April 1. The estimates ranged from 200,000,000 to 245,000,000 barrels, with the majority being in the neighborhood of 225,000,000 to 235,000,000 barrels.

A few of the companies which have complied with the commission's request for figures in the past failed to send in their reports prior to the hearing here today, while several of the independent refiners operating in Texas, who heretofore have not made a report, sent in their questionnaires this time.

The net result was a gain in the number of replies, with all of the majors, with two or three exceptions, continuing to comply with the commission's request.

Table No. 4—Comparison of Crude Stocks for Three Dates—Feb. 1, 1940, Dec. 1, 1939 and March 31, 1939, and Amount of Crude Immediately Available by Companies for Immediate Dispatch

(Figures in Thousands of Barrels)

Company	STOCKS 2-1-40	12-1-39	3-31-39	Amount of Present Stocks Available
Shell Oil Co.	6,524	5,293	6,628	3,000
Gulf Oil Co.	12,689	12,814	15,124	3,200
Tide Water Associated	3,166	2,914	4,863	1,000
Sun Oil Co.	4,485	4,565	5,820	2,485
Humble O. & R. Co.	11,502	11,341	12,267	217
Pan American P. & T. Co.	1,871	1,722	2,854	75
Atlantic Refining Co.	4,374	4,311	5,341	2,795
Consolidated Oil Co.	10,250	9,931	13,419	4,000
Socony-Vacuum Oil Corp.	25,059	24,280	24,968	5,112
Standard of Indiana	29,460	28,680	35,984	22,397
Texas Co.	23,492	22,962	25,984	4,072
Cities Service Oil Co.	5,468	5,468	6,804	.....
Ohio Oil Co.	9,375	9,667	10,313	7,000
Phillips Petroleum Co.	5,406	5,105	7,110	none
Skelly Oil Co.	354	273	657	none
Continental Oil Co.	7,821	7,395	8,798	7,821
Pure Oil Co.	3,922	3,754	3,844	.....
Barnsdall Oil Corp.	708	515	409	200
Taylor Refg. Co.	130	133	148	100
Southport Pet. Co.	299	87	267	100
Republic Oil Refg. Co.	1,317	872	1,286	.....
TOTAL	167,672	163,082	192,852	63,574

Kennedy Hits 'Surplus' Talk As Groundless

PONCA CITY, Okla., Feb. 15—The talk of below cost "surplus" gasoline, which has beset the oil industry this winter, is "completely groundless", Harry J. Kennedy, vice-president of Continental Oil Co. declared today in a statement here in which he revealed that his company had spent "a full week of unsuccessful effort to do some large buying".

"We say the talk is just misinterpretation by statisticians who don't understand all they know", the Conoco executive declared, adding that his company in its week search had found that a "few stray cars in isolated cases were the limit of the gasoline available".

The buying canvass, which was not applied through brokers, but through direct contact with refiners, he said, located one independent refiner who would part with less than one car a day over the next month. But this refiner's price was at the market, not below it, he added.

"We have supplied that refiner casinghead gasoline in times past and he is building some storage that is not finished, or he wouldn't have gone that far," Mr. Kennedy explained.

"A number of other independents, some large and some small, who are very friendly, were willing to help us out if we were in a pinch", said Mr. Kennedy, "but they felt they had to quote the average of the market or higher".

Storage 27% Under 1939

"Our own gasoline in storage at Ponca City is 27 per cent below a year ago, and we are torn up here with a big rebuilding and modernizing program, so right now we could take advantage of some bargains of the right quality material in Oklahoma and Kansas.

"We wanted to reduce shipments from this plant to our southwestern distributing stations and make some freight savings, too, but we didn't get very far", Mr. Kennedy added, terming the fruitless effort to bag the mythical bargains as "an old fashioned 'shike-poke' hunt".

Continental Oil Co. does not dispute the U. S. Bureau of Mines reports of gasoline stocks, but he asserted that current buying activity shows that the people with the gasoline want it for their established trade during the coming high consumption period.

"Not juggling commodity figures, but turning an honest dollar in realistic trading has been our business for 65 years", he commented, "and we have learned how to buy as well as sell, but if the supposed distress gasoline isn't of unsalable quality it must be out of reach of our markets at plants located where they never should have been built in the first place. The discouraging talk of excessive stocks is apparently the professional pessimism of merchandise brokers who thrive on disordered markets", the Conoco executive's statement concluded.

'Gas' Stocks Held Strongly, Southwest Refiners Agree

N. P. N. News Bureau

TULSA, Feb. 19.—Virtually all major and independent refiners agreed with the statement of Harry J. Kennedy, Conoco vice president, that gasoline stocks are in strong hands and that some of the below-the-market offerings were off-specification material.

Some refiners went further, pointing out that refiners were in better financial condition now to hold stored gasoline. Some expressed the belief that present prices were "on the bottom" and that the prospect of better prices early in the spring was a deterrent to promiscuous offerings at this time.

However, some refiners and brokers said that Conoco's inability to obtain gasoline was because of that company's strict specifications. Several refiners contended that below-the-market offerings were still being made in the Mid-Continent area, although some offerings—especially by Texas refiners—were being pulled in.

One broker reported his buying price for gasoline had been advanced recently, adding that he believed that it will not be necessary for refiners who have gone through the winter without dumping gasoline to do so at this time.

OIL TAX NEWS

Voiding Arkansas Law May Affect 18 Others

N. P. N. News Bureau

NEW YORK, Feb. 19.—Gasoline tax laws of 18 states may be affected by U. S. Supreme Court's decision last week which declared unconstitutional the Arkansas law applying the state tax on gasoline in excess of 20 gallons brought into the state. Title of the case was Dixie Greyhound Lines vs. McCarroll.

Dixie Greyhound Lines operate passenger busses from Memphis, Tenn., across Arkansas to St. Louis, Mo., and return. It protested paying a tax on the gasoline carried across the state of Arkansas for use in other states.

In making the run from Memphis to St. Louis, approximately 3 miles were traveled in Tennessee, 78 in Arkansas and 261 in Missouri, and—at the rate of five miles to a gallon of fuel—less than one gallon would be consumed in Tennessee, 16 would be consumed in Arkansas and 51 in Missouri. Arkansas had attempted to tax the company 6.50 cents per gallon, not only on the 16 gallons consumed within its boundaries, but also on the 51 gallons consumed within the state of Missouri.

18 States Listed

Eighteen other states have laws similar to the one Arkansas used to have. These states, together with the number of gallons each exempts from taxation by law, are: Colorado, 10; Idaho, 20; Illinois, 20; Indiana, 15; Iowa, 20 for automobiles, 50 for trucks and busses; Kansas, 20; Kentucky, 30; Louisiana, 30; Mississippi, 20; Nebraska, 20; Nevada, 25; New Jersey, 30; New Mexico, 25; South Dakota, 25 for automobiles, 50 for trucks and busses; Texas, 30; Washington, 20; Wisconsin, 20; and Wyoming, 20 "in any one case", 50 for common carriers. Tennessee has a law which taxes gasoline brought into the state, no amount specified, but exempts gasoline "for use or consumption in interstate commerce."

Only two of the other eighteen states, New Mexico and Wisconsin, mention that the tax is to be levied on gasoline used on the highways of their respective states. The other states have the power, as in the case of the Arkansas law, to tax the amount of gasoline in excess of that which they specify by law as soon as it crosses their borders.

If the states do not enforce their laws for the purpose for which they probably were intended—to receive compensation for the use of their highways—it might be reasonable to assume that the Supreme Court decision on the Arkansas Law will affect their tax statutes, for in handing down the decision, the court affirmed that the states have the right to ask reasonable compensation for the use of their highways, but declared they may not directly burden interstate commerce by taxation.

Taxpayers March on State Capitol at Albany, N.Y.

More than 8000 tax-weary citizens of New York staged a march on their state capitol at Albany, seeking relief. Pictured here is a contingent which demanded that the "emergency" gasoline tax be dropped

Virginia Tax Receipts Up

RICHMOND, Va., Feb. 17.—Gasoline consumption in Virginia during 1939 of 382,096,410 gallons was 7.59 per cent higher than consumption of 355,128,143 gallons during 1938. Consumption during December, 1939, increased 6.64 per cent over the same month in 1938.

Many Wildcats Drilled in 1939 To Every New Pool Discovered

TULSA, Feb. 17.—Not always is it understood that many unproductive wells are drilled to each one that finds a new oil or gas field, states the Indepeendent Petroleum Ass'n. of America, in announcing its compilation of wildcatting operations in 1939. It has gathered figures for the states where the wells drilled in search of new fields can be segregated from those which are part of the development program of known fields.

The accompanying table, based on its figures, shows by states total number of wildcat wells drilled, the number of dry holes and productive wells resulting and number of new fields discovered.

State	Number Wildcats	Dry Holes	Productive Wells	New Pools Discovered
Texas	1196	1103	93*	69 oil, 14 gas
Coastal La.	103	87	16†	11 oil, 1 gas
S. E. New Mex.	32	27	5	5 oil
Oklahoma	187	155	32	27 oil, 5 gas
Kansas	182	133	49	41 oil, 8 gas
Illinois	471	420	51	49 oil, 1 gas
Indiana	143	115	28	23 oil, 5 gas
Michigan	345	332	13	12 oil, 1 gas
Arkansas	37	32	5	2 oil, 3 gas
No. Missouri	46	43	3 small gas wells	

*Includes 10 distillate wells. †Includes 4 distillate wells.

NPN's Log

On Oil Legislation

Oil legislative information, summarized below, is based on reports received at Cleveland from Washington and state capitals which are deemed reliable although NATIONAL PETROLEUM NEWS assumes no responsibility for the accuracy or completeness of this information.

CONGRESS

SENATE BILLS

S 3347 Mead, N. Y.
"To promote industrial prosperity, to increase industrial employment, and to develop and conserve the natural resources by aiding and promoting research in the engineering experiment stations connected with colleges and schools of engineering in the . . . states. . . ." Education and Labor Committee.

HOUSE BILLS

HR 8420 Caldwell, Fla.
To exempt foreign crude from import excise taxes when used for asphalt or road oil. Ways and Means Committee.

HR 8448 Horton, Wyo.
To provide for extension of certain oil and gas prospecting permits. Public Lands Committee.

HR 8503 Snyder, Pa.
To provide for location, survey and building of a system of three transcontinental and six north-south highways. Roads Committee.

H J Res, 457 Celler, N. Y.
To transfer Marketing Laws Survey from WPA to Commerce Department. Interstate Commerce Committee.

HR 8420, Caldwell, Fla., to exempt foreign crude from import excise taxes when used for asphalt or road oil. Ways and Means Committee.

HR 8448, Horton, Wyo., to provide for extension of certain oil and gas prospecting permits on the public domain. Public Lands Committee.

H. J. Res. 457, Celler, N. Y., to transfer Marketing Laws survey from WPA to Commerce Department. Interstate Commerce Committee.

STATE BILLS

Kentucky

H-399, Hunnicutt.
Imposes $1 tax per pump on gasoline stations.

Mississippi

H-243, Bullock et al.
Graduated license tax on chain stores. Exempts gasoline filling stations where total daily stocks of gasoline, motor oil and accessories is less than $1000. To Ways and Means Committee.

S-126, Ford.
Graduated license and gross receipts tax on chain stores. No exemptions for petroleum outlets. To Finance Committee.

New York

A-1426, Tursheu.
Provides that prohibitions against business on Sunday shall not apply to gasoline filling stations. To Codes Committee.

Rhode Island

H-704, Cicci.
Provides for referendum vote of people on diversion at 1940 general election.

South Carolina

H-1470, Odom.
Exempts from all state taxes gasoline and oils used in farm operations. To Ways and Means Committee.

Changed Status

Kentucky

S-66, Gibson.
Creates oil and gas conservation commission to prevent waste of crude oil. Second reading in Senate.

H-165, Hammons.
Fixes license fee of $7.50 for each motor vehicle transported in or through the state, caravan system. Reported without recommendation.

Mississippi

SCR-11, Winter.
Concurrent resolution memorializing Congress to the U. S. to eliminate the taxation of gasoline by the federal government. Reported unfavorably in Senate.

Refinery Output Increases Light Fuel Stocks Drop

N. P. N. News Bureau

NEW YORK, Feb. 20.—Daily average crude runs to stills increased 110,000 barrels at U. S. refineries in the week ended Feb. 17, according to a report on refinery operations compiled today by the American Petroleum Institute.

Despite the high rate of production, stocks of light fuel oils continued to move lower for the country as a whole, being off 131,000 barrels last week. Refinery inventory of these oils was off 458,000 barrels, but stocks in terminals and in transit jumped 327,000 barrels. The increase in terminal and transit storage of light fuels was due to a jump in stocks of 199,000 barrels on the East Coast, where suppliers are replenishing stocks on which large drafts were made during January's cold spell, and a hike of 177,000 barrels in California terminal stocks.

Stocks of gas oil and distillate fuel on Feb. 17 were 4,350,000 barrels below inventory of these oils on a comparable date last year.

The large crude runs were felt in off-season gasoline, and 2,336,000 barrels of this product were added to storage during the week, the Institute's report shows. California, however, accounted for 556,000 barrels of the gasoline increase.

Refineries in the East Coast district, and in the Indiana-Illinois-Kentucky area accounted for 87,000 barrels of the 110,000 barrel hike in crude runs, with the former increasing crude throughput 39,000 barrels and the latter 53,000 barrels daily.

All other districts, with the exception of California, Appalachian and Inland Texas, where small reductions of 4000, 3000, and 2000 barrels daily, respectively were recorded, increased refinery operations last week.

With daily crude runs of 579,000 barrels daily last week, and with adverse gasoline weather, East Coast refiners added only 246,000 barrels to gasoline stocks, while increasing light fuel oil stocks at refineries by 59,000 barrels at the height of the heating oil season. Increase of 199,000 barrels in light fuel stored at terminals and in transit on the East Coast is probably reflected in the steady tanker rates, with ships moving this material from the Gulf and eastern refineries to terminal storage.

Stocks of heavy fuel for the country as a whole jumped 1,080,000 barrels last week, the Institute report shows. Stocks of heavy oils on Feb. 17, however, were 10,637,000 barrels below inventory of this oil at the same time a year ago.

D. C. Tax Collections Up

N. P. N. News Bureau

WASHINGTON, Feb. 12.—District of Columbia collections under its 2c "gas" tax totaled $2,876,847 in 1939, according to figures released by Office of Assessor, 7.4 per cent higher than collections in 1938 which amounted to $2,677,140. December collections totaled $245,589 as compared with $228,368 in same month of 1938.

Gulf Refiners Report Crude Runs Up, 'Gas' Stocks Up

HOUSTON, Tex., Feb. 19.—Ten Gulf coast refiners reporting operations to Gulf Coast Refiners Ass'n increased crude runs to stills 52,468 bbls. the week ended Feb. 10. Unsold stocks of motor fuel increased 82,983 bbls. A total of 16,257 barrels was withdrawn from aviation fuel stocks, with slight increases reported in diesel oil and No. 5 fuel oil inventories. Details shown in table at right.

	Houston District		Corpus Christi District		Louisiana District		TOTAL	
	Feb.10	Feb. 3	Feb. 10	Feb.3.	Feb.10	Feb. 3	Feb. 10	Feb. 3
Aviation Gaso.	243,659	232,266	317,470	345,120	None	None	561,129	577,386
Motor Fuel	171,371	192,434	542,198	434,748	126,003	129,407	839,572	756,589
Naphtha	None	None	196,965**	214,277*	None	None	196,965	214,277
Kerosine	None	None	None	None	None	None	None	None
Diesel Oil	None	None	4,377	None	None	None	4,377	None
Gas Oil	None	None	None	None	None	None	None	None
No. 5 fuel oil	None	None	27,950	19,890	None	None	27,950	19,890
Bunker C fuel	None	None	17,425	None	None	None	17,425	None
Crude runs	238,678	220,645	380,516	342,070	41,453	45,464	660,647	608,179

*High octane blending naphtha 118,450 bbls. **High octane blending naphtha 96,735 bbls.

Oil Contributes 10% of Goods Consumed, Receives Only 3% of the National Income

N. P. N. News Bureau

NEW YORK, Feb. 17.—The oil industry receives a very small part of the national income in return for the services it renders the public.

In 1935, for example, petroleum products by weight amounted to nearly 10 per cent of all merchandise the public consumed; yet the share of the national income that year the oil industry received was only a little better than 3 per cent, including that received in the retailing of oil products.

Data supporting this conclusion was presented, at the meeting here Feb. 15 of the Petroleum Division of the American Institute of Mining and Metallurgical Engineers, by John D. Gill and E. T. Knight, of Philadelphia, both economists with the Atlantic Refining Co. The data was compiled in their study of the place of the oil industry in the national economy.

"There is little room for doubt that the enormity of the physical service performed by the petroleum industry has given some critical elements of the population the impression that the industry is an octopus, reaching out with multitudinous long, strong and steadily extending arms, into the affairs of nearly every industry and every citizen of the land," these authors stated in introducing their data. "In a vague way, the magnitude of this service has been obvious to the least observant individual.

"But the relatively limited amount of national income which the 'octopus' was absorbing for its own welfare, heretofore has not been subjected to appraisal because of the lack of analytical studies of the subject matter."

The total weight of all merchandise of all classes, including agricultural products, consumed annually in this country, is approximately 1,925,000,000 tons, the study brought out. Of this, the 50,000,000,000 gals. of petroleum products the oil industry produces, transports and dispenses annually, amounts in weight to 182,000,000 tons, or nearly 10% of the total of all merchandise.

"If the oil industry is considered as that part of our national economy which performs the functions common to the so-called integrated companies, together with those specialists engaged in the production, transportation, refining or wholesale marketing, it may be said, as a result of the present investigation, that in 1935 the industry received approximately 2.4% of the national income," the Gill-Knight paper stated.

"If the industry is defined so as to include with the foregoing all other elements of the petroleum retail distribution system, the share of the supplemented industry becomes a trifle over 3%."

The paper stated that national income "paid out" in 1935 totalled $55,137,000,000. The 1935 income paid out by the oil industry, supplemented by all the elements in the petroleum retail distribution system, amounted to $1,665,520,000, equal to 3.02% of the national income. The distribution of this oil was given as follows:

Salaries and wages paid employes, including estimated income of independent marketers	$1,057,030,000
Rentals on leased acreage, etc.	120,530,000
Royalties on crude and natural gas produced	137,860,000
Interest on funded and long term debts, bank loans, etc.	64,800,000
Entrepreneurial withdrawals	126,100,000
Dividends, cash paid out	159,200,000
Total	$1,665,520,000

Oil Taxes Excluded from

Commenting on the fact that a much larger figure is generally taken to represent the oil industry's income, Messrs. Gill and Knight said the figures usually used were gross revenue, including sales and excise taxes, and differed greatly from income.

For 1935, they said gross revenue of the oil industry was $4,340,000,000, of which $808,275,000 was sales and excise taxes collected by the industry for the account of government. The industry's revenue from domestic sales and exports, exclusive of sales taxes, was given as $3,531,809,000. Included in this, it was stated, was many hundreds of millions paid out by the oil industry for the products and services of other industries whose incomes are derived in part from the petroleum industry's payments to them. These payments in 1935 were listed as follows:

Taxes, direct	$196,860,000
Railway freight on crude and products	240,390,000
Transportation charge of outside bulk haulers	6,000,000
Depreciation and depletion of facilities and reserves	559,420,000
Outside services: advertising, insurance, purchased electricity, water rents, etc.	318,230,000
Supplies, chemicals, coal, steel, containers, etc.	160,950,000
Cost of imported crude and products, including duty paid	42,680,000
Miscellaneous	145,230,000
Total	$1,669,760,000

In illustrating the vast extent of services to the public performed by the oil industry, the two authors stated that, if the energy in the 50,000,000,000 gallons of petroleum products dispensed annually, were turned into electricity in suitable apparatus of average efficiency, it would produce 485,000,000,000 kilowatt hours of electricity. "Last year, the all-time peak output of the electric light and power industry was 130,000,000,000 kilowatt hours," their paper stated.

The weight of the volume of oil products dispensed annually, 182,000,000 tons, compared with the record steel production of the country of 63,000,000 tons, they said; the record corn production of 82,600,000 tons, record anthracite coal production of 100,000,000 tons. Only the bituminous coal industry produces a larger mass of products than the petroleum industry, they brought out.

Price is Declared 20% Factor In Demand for Motor Fuel

N. P. N. News Bureau

NEW YORK, Feb. 17.—Price is a factor to the extent of only about 21 per cent in determining demand for motor fuel, Norman D. Fitz Gerald of New York, department of petroleum economics, Chase National Bank, told the session of economics Feb. 15, of the Petroleum Division of the A. I. M. E.

The number of motor vehicles registered is a factor to the extent of 68 per cent; miles of hard surfaced highways is an 8 per cent factor; national income is a 3 per cent factor, he brought out. He presented a mathematical equation based on these major factors for determining motor fuel demand.

"On the average, a general reduction of 1 per cent in the price of motor fuel may be expected to have a direct effect in raising consumption of only 0.37 per cent," he said. The increase in volume accompanying a reduction in price is generally gained at a loss of gross income from sales of the product, he said.

Price-Cut Doesn't Help

"Therefore, cutting prices below normal levels without a corresponding reduction in cost would be impractical and economically unstable, he added.

"This low effective elasticity of demand combined with the rather uniform character of the products of the major suppliers is the genesis of some of the intense and vicious competition in marketing. A short-lived reduction in price does little to stimulate demand but is a major controlling influence in shifting it from one seller to another, without appreciably increasing the total amount of business."

Moore Is New Chairman

NEW YORK, Feb. 17.—Thomas Verner Moore of Houston, head of the production research department of Humble Oil & Refining Co., is the new chairman of the Petroleum Division of the American Institute of Mining and Metallurgical Engineers. He took office following the annual meeting of the division here, Feb. 12-15. He succeeds W. H. Geis, Los Angeles, geologist with the Union Oil Co. of California. (See frontispiece of this issue.)

C. J. Coberly, of Huntington Park, Cal., president of Kobe, Inc., was elected associate chairman.

C. V. Milliken, Tulsa, of Amerada Petroleum Corp., and H. H. Power, Austin, Texas, of the Department of Petroleum Engineering, University of Texas, were elected members of the executive committee.

C. H. Keplinger, Wichita, Kans., and E. L. Rawlins, Houston, United Gas Public Service Co., were elected associate vice chairmen of production engineering.

Among officers re-elected was Walter Miller of Ponca City, Okla., vice president, Continental Oil Co., vice chairman for refining engineering.

Tide Water Promotes 5 Executives

B. I. Graves

L. D. Jurs

N. P. N. News Bureau

NEW YORK, Feb. 17.—Promotion of five major executives of the Associated (western) and Eastern divisions of Tide Water Associated Oil Co. were announced here by President William F. Humphrey.

Chairmen of the operating committees of the three Tide Water associated divisions—Associated, Mid-Continent and Eastern—are responsible for operations in each division. Personnel of these committees is made up of executives in charge of production, transportation, manufacturing, sales, and financial departments.

B. I. Graves, who has been a director and a vice-president of Tide Water for the past ten years, and vice-chairman of the Associated division operating committee, has been named chairman of the operating committee for the eastern division, with headquarters at New York.

Started As Junior Clerk

Mr. Graves started as a junior clerk with Associated Pipe Line Co. in 1909. After occupying various positions in the accounting and personnel departments of Associated Oil, he joined the sales department in 1922 and was sent to the Orient as general sales representative, with headquarters at Shanghai. Returning in 1925 he was appointed assistant to the vice-president in charge of sales. In 1929 he was named general sales manager.

Mr. Graves is also a director of Pioneer Midway Oil Co., Sterling Oil & Development Co., and the Western Minerals Co., all subsidiaries of Tide Water Associated.

George J. Hanks, who early in February was elected a director of the company, has been appointed vice-chairman of the eastern division operating committee. (See N.P.N., Feb. 14, Page 48, for picture and other details of Mr. Hanks' appointment.)

George J. Murray

Jurs Moved Up

L. D. Jurs, vice-president in charge of transportation and supplies for the Associated Division, has been appointed vice-chairman of the operating committee of the western division, filling the vacancy created by the promotion of Mr. Graves. Mr. Jurs has been with the company for more than 30 years, 12 of them as vice president in charge of transportation.

Harold F. Parsons, who was assistant to the executive vice president for the past 10 years, has been appointed assistant vice president and manager of the New York crude and products department, and will aid Mr. Hanks in the activities of the eastern transportation and supply division. Mr. Parsons has been with the organization in its New York office for more than 22 years.

George J. Murray, Jr., who has been assistant to the president for the past 10 years, has been appointed to the newly-created post of public relations manager. His activities will embrace developing and maintaining public good will, publicity, relations with stockholders, governmental bureaus and statistical and corporate agencies, and memberships and subscriptions to outside organizations.

Mr. Murray has been with Tide Water and its predecessor subsidiary companies for the past 18 years. He started as a clerk at the company's Bayonne refinery in 1902.

Bayer Continues on West Coast

L. F. Bayer, director and vice president of manufacturing, continues as Chairman of the Operating Committee of the Associated Division, with headquarters at San Francisco.

E. H. Salrin at Houston and R. B. Pringle at Tulsa, both of whom are vice presidents and directors of the company, continue as chairman and vice-chairman, respectively, of the Mid-Continent division operating committee.

In announcing the promotions, President Humphrey pointed out that it follows the long established policy of the company to promote from within the organization, and that "all of these men have risen to executive positions from the company's ranks during their long periods of service."

Michigan Sets Date

PORT HURON, Mich.—Michigan Petroleum Ass'n., an organization of independent oil marketers, will hold its sixth annual convention at the Detroit-Leland Hotel in Detroit on Wednesday and Thursday, April 3 and 4, J. F. Wilson, president, announces.

Harold F. Parsons

Latest Oil Industry Statistics

Inventories, Jan. 31, 1940, of Pennsylvania Oils Other Than Lubricating Oils

(Compiled by National Petr. Ass'n. from reports of all companies which refine Penna. crude. Figures as of Jan. 31, 1940 in bbls. of 42 U. S. gals.)

	Production	Inventory
RAW LONG RESIDUUM (includes all raw long residuum below, and not salable as, 600 fire)	80,636	23,226
600 STEAM REFINED STOCK (includes all steam refined stock commonly sold or used as 600 and as raw material for bright stock)	298,900	196,583
OTHER STEAM REFINED STOCK (not included in above)	54,856	69,139
FINISHED DEWAXED LONG RESIDUUM	43,335	65,648
BRIGHT STOCK (does not include any material reported in above product)	199,641	236,953
VISCOUS NEUTRAL, below 180 vis. but not below 142 vis. at 100	87,407	123,756
VISCOUS NEUTRAL, 180 vis. at 100 and above	88,776	102,693

Crude Oil Production for the U. S.

(American Petroleum Institute figures)

	Week Ended Feb. 17 Barrels	Feb. 10 Barrels	Feb. 3 Barrels
Oklahoma	427,100	423,700	405,650
Kansas	176,700	174,650	181,600
Nebraska	.....	100	100
Texas	1,361,200	1,356,550	1,242,300
Louisiana	278,200	279,300	271,600
Arkansas	68,300	69,100	70,650
Mississippi	6,750	5,100	4,600
Illinois	408,300	384,550	372,950
Indiana	7,250	5,650	6,600
Eastern (Ill. and Ind. excluded)	96,600	99,000	94,850
Michigan	64,900	64,950	63,250
Wyoming	66,550	68,950	61,500
Montana	17,050	16,800	17,050
Colorado	5,050	5,200	4,800
New Mexico	111,200	113,200	101,050
California	622,800	621,400	600,200
Total U. S.	3,717,950	3,688,100	3,498,800
Crude Imports	82,800	97,900	91,430
Total New Supply	3,800,750	3,786,000	3,590,230

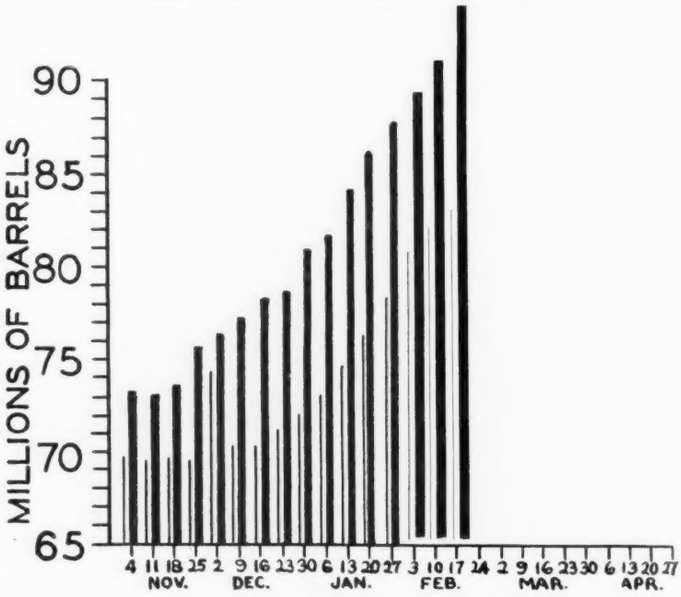
Production and Inventory of Pennsylvania Lubricating Oils

(Compiled by National Pet. Ass'n. from reports of oil region refiners. Figures in barrels.)

NAPHTHAS & GASOLINE	
(1) Straight run, unblended and/or unleaded, for sale as motor fuel	21,451
(2) Naphtha and gasoline, for sale for blending or further refining, or held at refinery for further distillation, reforming, blending or leading	358,955
(3) Below 65 octane, not included in (1) or (2) above	13,158
(4) 65 octane & above	380,341
Salable naphthas other than motor fuel material (does not include Refinery Process naphthas)	32,585
Kerosine	63,807
36/40 gas oil (includes furnace oil)	83,470
Fuel Oil (not reported above)	20,699
Oils held as cracking plant charging stocks	398,471
Non-viscous neutral	15,463
Wax distillate	126,092
Crude petrolatum	24,816
Wax (lbs.)	5,281,543

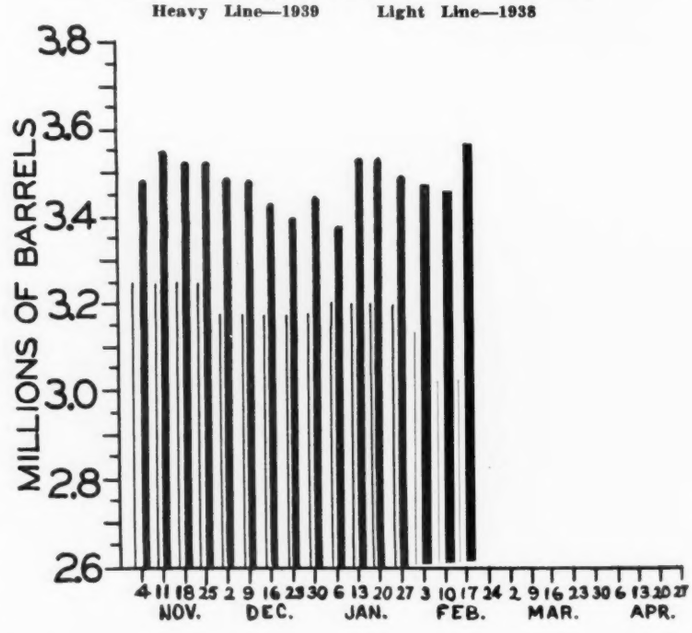
Total U. S. Motor Fuel Stocks

Heavy Line—1939 Light Line—1938



Daily Average Crude Runs to Stills

Heavy Line—1939 Light Line—1938



A. P. I. Weekly Refinery Report

(Figures in Thousands of Barrels of 42 Gallons Each)

Districts	Daily Average Crude to Stills Week Ended Feb. 17	Feb. 10	Per Cent of Reporting Capacity Operated Week Ended Feb. 17	Feb. 10	(a) Gasoline Production Week Ended Feb. 17	Feb. 10	Stocks Total Finished & Unfinished Motor Fuel (b) Week Ended Feb. 17	Feb. 10	Stocks of Gas Oil & Distillates At Refineries Week Ended Feb. 17	Feb. 10	At Terms. Trans. Pipelines Week Ended Feb. 17	Feb. 10	Stocks of Residual Fuel Oil At Refineries Week Ended Feb. 17	Feb. 10	At Terms. Trans. Pipelines Week Ended Feb. 17	Feb. 10
East Coast	579	545	94.1	88.6	1,445	1,404	19,227	18,981	2,654	2,595	4,805	4,606	3,718	3,085	4,180	3,708
Appalachian	120	123	82.8	84.8	464	444	3,855	3,863	232	221	163	167	598	567	.....	.....
Ind., Ill., Ky.	554	501	94.7	85.6	2,073	1,981	15,468	14,590	2,439	2,507	311	353	2,571	2,562	35	27
Okla., Kans., Mo.	272	251	79.5	73.4	(c)952	(c)834	8,432	8,095	1,055	1,109	22	23	1,972	1,975	.....	.....
Inland Texas	128	130	80.5	81.8	522	514	2,018	1,916	290	289	.....	.....	1,563	1,591	.....	.....
Texas Gulf	855	849	90.0	89.4	2,567	2,460	15,259	14,900	2,678	2,683	525	525	5,329	5,511	179	217
La., Gulf	128	125	73.1	71.4	273	269	3,172	3,235	584	738	19	21	920	726	241	253
No. La., Ark.	45	41	81.8	74.5	125	122	705	654	210	243	19	19	434	419	.....	.....
Rocky Mt.	50	52	78.1	81.3	201	222	1,605	1,540	150	161	.....	.....	473	468	.....	.....
California	474	478	63.6	64.2	1,332	1,405	17,704	17,495	7,218	7,407	1,817	1,640	56,204	56,978	22,997	22,242
Total Reporting	3,205	3,095	83.6	80.7	9,954	9,655	87,445	85,269	17,510	17,953	7,681	7,354	73,784	73,882	27,632	26,447
U. S. Total (d)	3,570	3,460			11,508	11,162	93,985	91,649	18,195	18,653	7,681	7,354	75,792	75,897	27,632	26,447
U. S. Total 2-17-39 (d)	3,027				10,312		82,908		21,162		9,044		82,496		31,565	

(a) Includes straight-run, cracked and natural blended.
(b) Includes stocks at refineries, in bulk-terminals, pipe lines and in transit.
(c) 12% of reporting capacity in this district did not report gasoline production.
(d) Estimated, U. S. Bureau of Mines basis.

Refining Technology

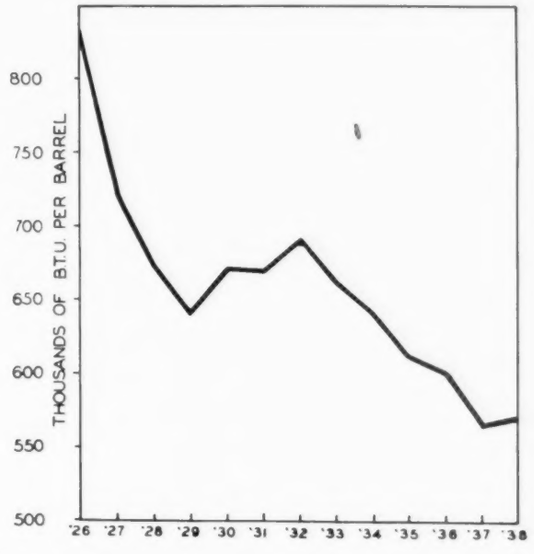
INCLUDING INTERNATIONAL PETROLEUM TECHNOLOGY

J. C. CHATFIELD, Managing Editor

COMBUSTION engineers on the staff of oil refining companies have made a remarkable record during the past fifteen years in which efficient fuel utilization has been considered important enough by management to warrant employment of combustion experts. The amount of fuel required to refine a barrel of crude oil today is 32 per cent less than it was in 1926.

This reduction in fuel consumption is more remarkable when it is remembered that cracking is much more general now than it was 15 years ago. Crude runs to stills today are 49.5 per cent greater than in 1926 and production of cracked gasoline is 188.5 per cent greater than 15 years ago. Then cracked gasoline represented 12 per cent of crude runs to stills. Today cracked gasoline represents 23 per cent of crude charged to stills.

Work done on today's crude oil thus is not comparable with the work done in 1926. It requires a far greater input of heat to crack 23 per cent gasoline from a barrel of crude than it would to crack 12 per cent gasoline from the same barrel of crude. In other words, the combustion engineers have done an even better job of saving fuel than is indicated in the following chart based on studies by the U. S. Bureau of Mines.



Refinery fuel consumption per barrel of crude run to stills has risen only three years since 1926

During the worst years of the depression fuel consumption by oil refiners increased. This was due, of course, to the fact that plants were operated at less than full capacity. Obviously top efficiency cannot be maintained under such conditions. As soon as demand increased to the point where plants could be run to capacity the fuel consumption curve resumed its steady downward trend.

The curve is not falling as rapidly today as a few years ago. This would seem to indicate that the combustion engineers have plugged up the biggest leaks and will have to work even more diligently in the future than in the past to create new savings. Most plants now analyze flue gases and reduce excess air input to furnaces. Many increase furnace capacity by preheating the air. As fuel costs rise due to failing supplies of natural gas, higher fuel oil or coal prices, greater savings become possible through the installation of waste heat boilers or other heat recovery equipment.

The importance of fuel costs in the economy of an oil refiner are well illustrated by another article in this issue telling how Western Pennsylvania refiners have found it necessary to go back to coal after several years of relatively cheap natural gas. One refiner in the Bradford field with a rated still capacity of 2500 barrels per day found his costs $15 per day higher when the supply failed. To this was added a fuel handling investment of some $18,000.

★ ★ ★

It is not easy to put a monetary value on the reduction in fuel costs which combustion engineers have achieved for the refining industry during the past 15 years. That is true because refineries burn all sorts of fuel and because the value of these fuels varies widely in different refining centers. Coal at $3.50 in Pennsylvania is a lot different from 10-cent natural gas in refining centers near the oil fields.

On a rough calculation it may be stated that refiners saved $3,000,000 in 1938 because of increased combustion efficiency compared with 1926. In 1938 refiners employed 661 trillion B.t.u. to refine 1,165,000,000 barrels of crude oil. In 1926 refiners used 647 trillion B.t.u. to refine 779,000,000 barrels of crude. The increase in crude runs in the period was 49.5% and the increase in fuel consumed only 2.2%. If the 1926 rate of fuel consumption had continued through 1938 refiners would have used 306 trillion B.t.u. more than was actually required. Put your own value on a B.t.u. At the low figure of 1 cent per 100,000 B.t.u. the saving of $3,000,000 would be indicated, without taking into consideration the increase in cracking or other factors.

Western Pennsylvania Refiners Back On Coal as Gas Supply Fails

By M. G. Van Voorhis
N. P. N. Staff Writer

AN INCREASE in the use of coal as fuel at refineries in the Bradford, Pa., area and in western New York state has taken place during the past three months as the result of declining production in natural gas fields in the vicinity. These fields have supplied industrial fuel to many industries for nearly ten years at rates more economical than coal, it is said.

Gas rates were made low enough to make it worth while in many instances to remove coal equipment already installed and replace it with gas-burning equipment. During the period that gas was available at these low rates some new equipment was installed provided only with gas-burning equipment.

Although there were indications of declining gas production as early as last summer, it was with considerable consternation that refiners learned early in November that the gas supply would be discontinued, in some instances within two or three days. Actually, gas was delivered longer and work of converting equipment for coal or oil was still under way the first week of February.

Hit as hard as any refiner handling Bradford crude was the Bradford Oil Refining Co. The boiler settings required considerable reconstruction to be suitable for coal firing and cracking furnaces had not been equipped with combination burners capable of burning both oil and gas.

The first step was to convert the boilers to oil. This was done in six days which was the time required to obtain some tank cars of topped crude from Illinois to serve as fuel. Gas was not shut off until the oil was received although a two-day notice was given Nov. 3, 1939. Since it cost Bradford Oil $135 a day more to burn oil under the boilers than burning natural gas, no time was wasted in preparing for coal.

To do this it was necessary to tear down the boiler settings under the three boilers, shorten them in length, put in a new suspended arch construction, in addition to rearranging the boiler piping to some extent. This work was done in preparation for installation of six coal stokers, two under each boiler, and was completed Jan. 15 during the coldest weather of winter with temperatures as low as 20 degrees below zero.

Natural gas consumption had been close to 600,000 cu. ft. daily before the change to coal. Daily coal consumption has been 35 tons since the change-over. With a coal cost of $3.50 per ton based on 14,500-B.t.u.-per-pound coal the present cost of burning coal is still about $15 per day more than gas of about 1050 B.t.u. per cu. ft., it is estimated. The additional cost is attributed to the greater manpower required for feeding stoker hoppers and transferring coal into the boiler house.

As long as the cracking, reforming, and crude stills were kept in operation they were unaffected by the gas storage because sufficient cracking gas was produced to supply fuel. Natural gas was used only when the stills were being put back into operation. For that reason the installation of new combination gas and oil burners was delayed until each unit was shut down. On Feb. 8 the last of 30 new combination burners purchased for all units were installed on the cracking furnace.

So far the bill for this change-over from gas to coal and oil has been approximately $18,000, including the cost of equipment and installation. There are still more expenses to be added to this in providing bins for coal and conveyors for coal handling. This is expected to add about $3000 more to the expenses involved.

Some idea of present fuel economy with gas at an industrial rate of 35 cents per thousand cu. ft. offered Bradford Oil Refining Co. is shown by the fact that for one cent the consumer gets 30,000 B.t.u. from gas as compared with 83,000 B.t.u. from coal at $3.50 per ton delivered, and 32,000 B.t.u. from oil at an estimated $1.60 per barrel.

THE amount of heat purchased in 600,000 cu. ft. of natural gas of 1050 B.t.u. per cu. ft. is 630,000,000 B.t.u. as compared with slightly over 1,000,000,000 B.t.u. in 35 tons of coal of 14,500 B.t.u. per pound, indicating the difference in efficiency of the two fuels. Some improvement in coal efficiency is expected when automatic draft control equipment is brought into use. The above figures are only rough estimates on the first two or three weeks of operation.

At another refinery gas consumption was around 3,000,000 cu. ft. daily. This plant was partially prepared for changing over to coal for its two main boilers because one had been built originally with stoker equipment. This was removed a short time later to be stored while gas was available at a price making the change worth while. The second boiler, installed some time later was designed so that pulverized coal could be burned in it with a minimum of reconstruction if circumstances demanded the change from gas to coal.

However, equipment for handling coal is expensive as compared with gas and even with this provision an expense of close to $18,000 was involved. Newly installed pulverized coal equipment makes No. 2 boiler at this plant one of the most modern automatic coal-fired boilers to be found anywhere. Hauling of ash is the only extra operation in comparison with gas. Automatic equipment delivers coal through pulverizing equipment from coal car to furnace as well as blowing ash to overhead storage from which it may be dumped in trucks by gravity.

The ash handling equipment was not yet completed Feb. 9. One of the difficulties of the gas shortage in this instance was the fact that while the pulverizing equipment is a standard item in coal handling equipment it had to be built before delivery could be made. This delayed changing over to coal for several weeks. Under

these circumstances the gas was not cut off immediately but was tapered off gradually.

The stoker was installed after the pulverizing equipment and started up on Feb. 10. When the stoker started operating gas consumption was reduced below 1,000,000 cu. ft. daily for the first time. Standby oil-fired boilers were put in service during the time the installations were being made.

One of the interesting facts concerning the installation of coal pulverizing equipment was the fact that the maximum boiler output jumped from 48,000 pounds of steam per hour to 58,000 pounds. Thus the use of pulverized coal increased the boiler steam capacity of the furnace close to 20%. The efficiency of heat recovery from pulverized coal ranges from 78 to 82% as compared with percentages in the sixties for stoker firing. This compares with 88-89% efficiency with gas fuel, it was estimated. Reinstallation of the stoker, a few needed repairs and parts, and installation of three or four new combination oil and gas burners on cracking equipment added an estimated $2500 to the cost of the change-over.

A third refinery, in a more fortunate position with regard to ability to change from gas to coal in its boilers already had pulverizing equipment in place ready to go with but minor installation problems. In this instance 2,000,000 cu. ft. of gas was being burned daily. It was little or no problem to cut off the gas and start up pulverized coal equipment and substitute 100 tons of coal daily. Unlike most of the refineries this plant was able to dispense with gas shortly after the notice came early in November. Nearly all gas burners were of the combination oil and gas type so that no changes were necessary from that standpoint.

Refineries are, of course, dismayed at being forced to return to a fuel which has so many disadvantages as compared with gas. It has been pointed out that the increase in equipment means necessarily more maintenance and attention, to say nothing of the dirt that it produced in an otherwise clean boiler house. It has been pointed out further that installation of either stokers or pulverizing equipment means putting added dependence on electric power to keep the boilers in operation and may make it advisable and economical to install steam turbine generators to insure uninterrupted electric power.

THE gas shut-off did not come without some warning to those familiar with the gas production fields. There was evidence in the gas fields that there might be a shortage last summer when salt water showed up in some of the gas wells. Another sign was the reduction of gas pressure in the lines as long as six months ago.

In the recent report on fuel consumption at refineries in 1938 it was shown that coal continued as the primary fuel of the Appalachian district. Total consumption for the district was reported by the Bureau of Mines as 437,000 tons in 1938. If the present rate of coal consumption by refineries affected by this gas shortage continues through 1940, it may be expected that coal consumption by refineries in the Appalachian will equal the 1937 total of 577,000 tons. With continuance of the business conditions of the past several months the figure may go even higher as the result of higher consumption by all refineries. The elimination of natural gas as fuel at these refineries will cut the total natural gas consumption of Appalachian district refineries to less than half the 1938 total of 4,450,000,000 cu. ft., it is estimated.

In other portions of the Appalachian district coal has been the fuel in general use. Natural gas has not been widely available at rates comparable with those enjoyed at the north end of the district. The gas rate increase, or shortage, therefore, affected only those refiners who for a period of several years were receiving gas at a price making it competitive with coal.

Although the market for fuel oils was increased, refiners affected by change in refinery fuel were not benefited because what fuel they had was relatively small in quantity and an increased amount was required for their own use as fuel.

Contents...

REFINING TECHNOLOGY

February 21, 1940

Sudden gas shut-off and price increase forces refiners of Bradford crude to convert gas-fired steam plants to coal. Oil displaces natural gas in starting up cracking stills R-50

Fuel consumption of refineries in the Appalachian district is too high. It can be reduced by better combustion control, stopping leaks, and installation of accessory equipment, O. F. Campbell, Sinclair engineer tells western Pennsylvania refiners R-53

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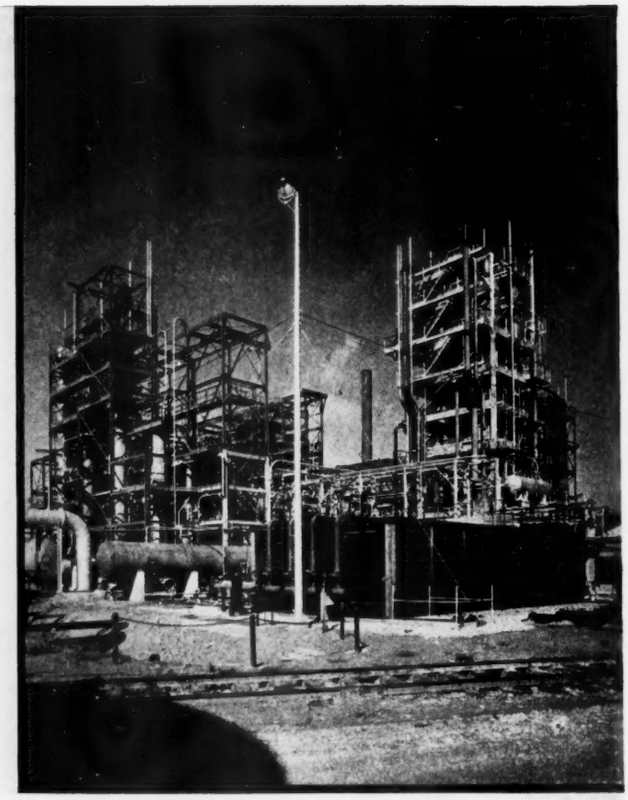

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Efficient Combustion Control Promises Lower Fuel Costs

ABSTRACT

Heat consumption of refineries in the Appalachian district is considerably higher than most other petroleum producing districts and more than double that of the most efficient district. O. F. Campbell suggests to refiners in this district that better combustion control, reduction of wastes, and installation of economizing accessory equipment are all worth-while considerations deserving the attention of a capable and experienced engineer.

POINTING out that complete refineries of Pennsylvania crude oil are operating with a fuel consumption or heat requirements more than double that of more efficient refineries in other districts, O. F. Campbell, Sinclair Refining Co., discussed economies which may be effected by more efficient combustion control before three group meetings of the National Petroleum Association Department of Manufacture in western Pennsylvania recently.

Mr. Campbell backed up his statements with colored motion pictures of actual furnace conditions and showed graphs by which calculations accurate to within 1% could be made of actual furnace efficiency. He pointed out the necessity of a more careful study of oil refining processes to reduce the present number of operations in producing finished oils and to effect savings by stopping leaks. He discussed the desirability of installing waste-heat recovery equipment, the more economical use of steam, and the desirability of equipping any fuel-burning unit to take advantage of the lowest price fuel available.

There are reasons for the Appalachian district having the highest heat consumption per barrel of crude, it was admitted. Appalachian plants do more complete refining; the ratio of total amount of oil charged to stills to the total crude run is higher, steam and power demands are higher, solvent treating, filtering and dewaxing plants are necessary, and usually a colder climate prevails. However the engineer in charge of fuel conservation should recognize that high fuel consumption does exist and that he has a greater opportunity toward reduction in fuel consumption than in any other district in the U. S.

Inasmuch as it may be uneconomical to abandon old equipment and install new, Mr. Campbell confined his discussion to operating existing equipment more efficiently and economically. During the past few years it has not always been economical to install heat-conserving equipment, due to low-priced fuels. Pennsylvania refiners usually have a choice of natural gas, fuel oil, coal, or petroleum coke.

When burning gas and fuel oil they should be burned in combination gas and oil burners that will burn each fuel equally well when burned separately or simultaneously in any proportion. The choice of burner for any particular installation is very important, he said, since a poor selection is likely to result in excessive refractory maintenance as well as uneven heat distribution in a furnace, which may cause short life of oil tubes.

When burning coal there is a choice of hand firing, stoker firing, or pulverized coal firing and the purchaser of equipment is in the same quandary as the purchaser of oil and gas burners. To take advantage of the lowest fuel price, and where coal can be used, it appears best to burn coal in the pulverized form and to install tri-fuel burners

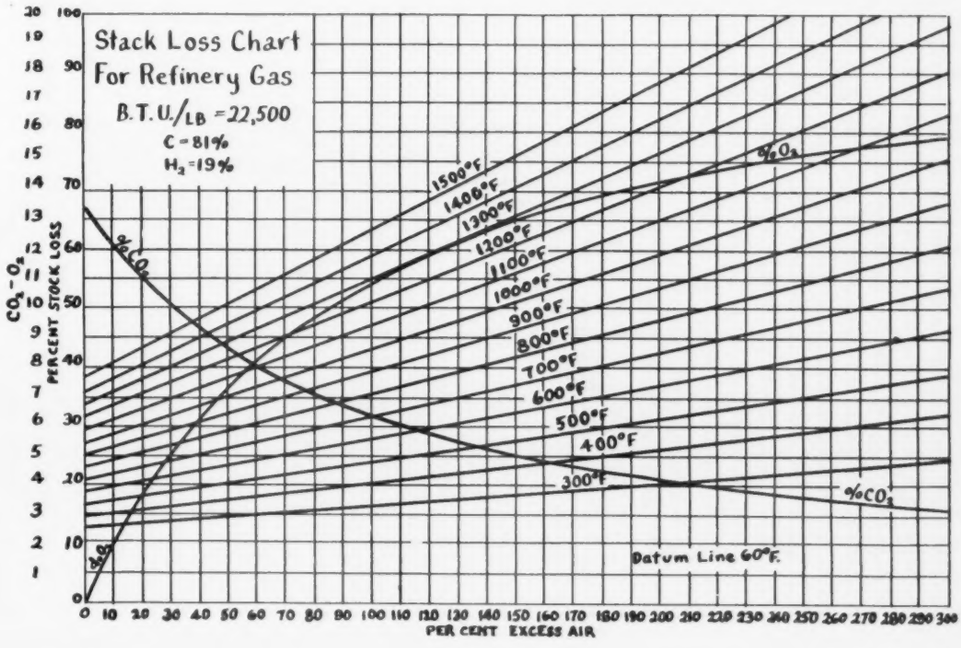

Fig. 2—A stack-loss chart enables quick determination of possible fuel savings from proper adjustment of excess air supply to a furnace. The only data required are carbon-dioxide content (by Orsat test) and temperature of exit flue-gases. The above chart is for 22,500-Btu. refinery gas with 81% C and 19% H_2

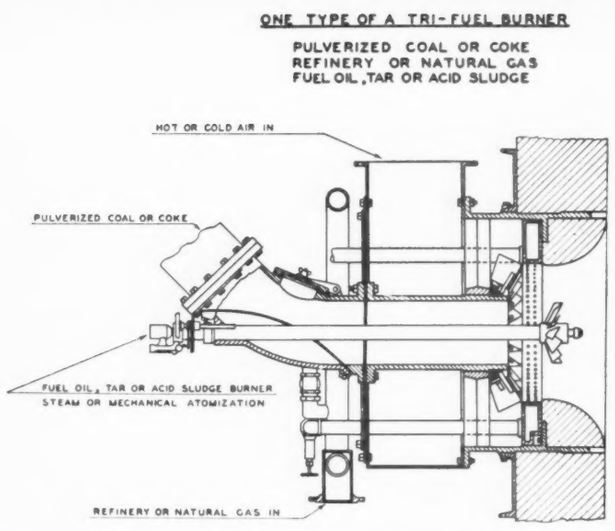
ONE TYPE OF A TRI-FUEL BURNER
PULVERIZED COAL OR COKE
REFINERY OR NATURAL GAS
FUEL OIL, TAR OR ACID SLUDGE
HOT OR COLD AIR IN
PULVERIZED COAL OR COKE
FUEL OIL, TAR OR ACID SLUDGE BURNER
STEAM OR MECHANICAL ATOMIZATION
REFINERY OR NATURAL GAS IN

Fig. 1—To take advantage of the lowest fuel price, and where coal can be used, it appears best to install tri-fuel burners which can burn oil, gas, or pulverized fuel equally well when burned separately or simultaneously in any proportion

which can burn oil, gas, or pulverized fuel equally well when burned separately or simultaneously in any proportion.

With existing equipment there is only one major opportunity to save fuel. This is by reducing the excess air to the furnace as much as possible. Ideal combustion would be to supply just enough air to burn up the fuel and no more. However, since ideal conditions do not exist, some excess air is a necessity. The fuel saving effected by adjusting the air supply to the furnace can be calculated readily provided the exit flue-gas analysis and exit flue-gas temperature are known. Flue-gas can be analyzed with an Orsat apparatus. The calculation of the stack losses for each flue-gas analysis and for each temperature is simplified by use of a set of combustion curves or charts for each fuel.

Time, temperature, and turbulence are three essential factors regarding the burning of any fuel. If any one of these is lacking, one or both of the other two must be increased. When burning coal on a stoker or by hand-firing, the temperature of the fuel bed is high, the time factor is long and the effect of turbulence is not so essential, but the distribution of air under the fuel bed and the fusion point of the ash are important items. Pennsylvania type coals ordinarily have a high ash fusion temperature and are excellent coals for stoker firing. The grindability of Pennsylvania coals is also high, making them good pulverized fuel.

The accompanying chart is a stack-loss chart for the average refinery gas. To use this chart, assuming 9% of CO_2 and 4.5% of oxygen are found in the flue-gas analysis and the stack temperature is 500° F., locate the 9% CO_2 on the left-hand scale and proceed horizontally to the right until the per cent CO_2 line is intersected. From this point proceed vertically downward to the 500° temperature line and read the per cent stack-loss on the left-hand scale, which turns out to be 20%. The oxygen content is used only for checking accuracy of the flue-gas analysis. The lower horizontal scale gives the per cent of excess air in the exit flue-gas.

Mr. Campbell presented several other charts adapted to other fuels and fuel mixtures. The accompanying table shows losses due to water, steam, and air leaks throughout the refinery and their effects upon monthly costs. Pennsylvania refineries are inherently high steam consumers making steam a major problem. Steam requirements should be developed at high pressure wherever possible and by-product power generated for the electrical energy requirements.

The steam pressure at which the boilers must operate for the generation of electrical energy is a function of the ratio of electrical energy of the refinery steam demand. For refineries of Pennsylvania oils the optimum steam pressure appears to be in the range of 400-600 psi where the main plant steam pressure is 100-150 psi.

A study of over-all refinery steam consumption should be made in order to eliminate the wastage of exhaust steam to the atmosphere. Stand-by electrically-driven equipment is advisable to balance steam and electrical energy requirements in order to prevent wastage of exhaust steam to the atmosphere during the summer. There is a general tendency to use more steam in process than necessary in order to assure a proper finished product. A weekly check-up and repair of all steam leaks was advised. Steam-flow measurement to each steam-consuming unit was said to be desirable in providing a daily check-up of steam consumption.

THE treatment of boiler feedwater should not be neglected in order to assure protection for the boilers and more continuous boiler operation. Boiler feedwater should be treated to insure against caustic embrittlement, corrosion, and scale. With boiler water properly treated, boilers should operate continuously for at least six months without cleaning.

Mr. Campbell pointed out other ways of improving furnace efficiencies and reducing steam consumption within a refinery to reduce the overall refinery fuel consumption, such as installation of waste-heat recovery equipment on stills, waste-heat boilers, and air preheaters for reducing flue-gas temperatures. Waste-heat boilers were said to be becoming quite prevalent in the oil industry and should be used more extensively.

It was pointed out that the use of air preheaters for preheating air for combustion not only save fuel but in most cases increase the capacity of a furnace. The higher the preheated air temperature, the higher will be the theoretical flame temperature, and the greater will be the amount of heat absorbed by radiation. Less heat will be absorbed by convection as a result and the flue-gas temperature will be reduced. In addition, the use of forced preheated air provides more sensitive and more definite furnace temperature control and makes it possible to provide more even heat distribution in any furnace. The use of forced- and induced-draft substantially eliminates any disturbance of still or boiler operation incident to changes in weather conditions and for still operation this was said to be very desirable.

It was suggested that refiners assign a capable engineer to fuel conservation, and support him in his findings.

Volume and Cost of Leaks of Steam, Air and Water

Size of opening (dia. in inches)	AIR		STEAM		WATER	
	Number of cu. ft. wasted per month at 100 lbs. press.	Total cost per month	Number of pounds wasted per month	Total cost per mo. with steam	Number of gallons wasted per month	Total cost per mo. with water
1	71,194,000	$3,559.70	3,271,110	$1,308.44	4,923,733	$246.18
¾	39,977,000	1,995.05	1,840,000	736.00	2,769,600	138.48
½	17,740,800	889.92	817,778	327.11	1,230,933	61.54
⅜	9,979,200	498.96	460,000	184.00	692,400	34.62
¼	4,449,600	224.48	203,000	81.20	307,700	15.38
⅛	1,114,560	55.73	50,500	20.20	76,900	3.84
1/16	278,640	13.93	12,750	5.10	19,200	.96
1/32	69,552	3.32	3,175	1.27	4,800	.24

TVP

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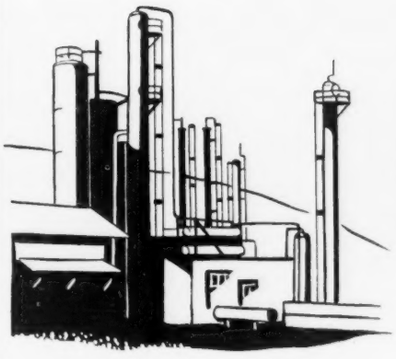

Quality

COMPETITION

BY ANY method of test, gasoline produced by the True Vapor Phase* process gives high anti-knock value. Octane ratings by the 1939 Research method are remarkably high when compared with A.S.T.M. Motor Method ratings. Road test values correlate closely with Research Octane numbers.

Following are anti-knock ratings by both Motor and Research methods of nine gasolines produced from widely varied charging stocks from Michigan, Illinois, Pennsylvania, and East Texas fields. Observe that the average 1939 Research value of the nine fuels is more than thirteen octane numbers higher than the average Motor method octane number.

Octane Value of T. V. P. Gasoline
From Various Cracking Stocks

Charging Stock	OCTANE NUMBER A.S.T.M.	'39 Research	Charging Stock	OCTANE NUMBER A.S.T.M.	'39 Research
Topped Crude	70.2	84.0	Topped Crude	72.0	87.5
Topped Crude	73.0	86.5	Topped Crude	73.5	86.8
Gas Oil	79.0	93.5	Naphtha Reforming	71.0	83.8
Topped Crude	71.8	85.0	Gas Oil	74.0	88.3
Naphtha Reforming	78.9	92.2			

Results such as these are obtained in units whose cost and yields compare favorably with liquid phase plants. Ask us how we can help you meet the new competitive factors in today's markets on an economic basis.

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Octane Number and Lead Response Improved by Solutizer Sweetening

By D. L. Yabroff and A. C. Nixon*

ABSTRACT

Average effect of solutizer sweetening on 31 gasolines of varying source and type tested is to save 31% of tetraethyl lead in gasolines whose average mercaptan sulfur content was .060% by weight in the sour gasoline. Tetraethyl lead saving ranged from 9 to 65%.

When leading to an octane number five units higher than that of the sour gasolines, solutizer sweetening resulted in an average lead saving of 2.5 cent per barrel. The range of savings was from 0.3 to 25 cents per barrel. Solutizer treatment removes the mercaptans from gasoline instead of converting them to other sulfur compounds.

IT IS well known that the presence of sulfur compounds in gasoline decreases the octane number and the lead susceptibility (2, 3, 4, 6, 7, 8, 10, 11, 12). The magnitude of this effect is dependent not only on the quantity of sulfur compounds present, but also on the type. Polysulfides are among the worst in this respect, followed by disulfides and mercaptans, thioethers, and thiophenes. Conventional sweetening processes convert mercaptans to disulfides, and in many cases, small amounts of polysulfides are formed as well. As a result of sweetening, the octane number and lead susceptibility are lowered to a greater or lesser extent, as compared to the sour gasoline, depending on the particular gasoline, the sweetening process employed, and how carefully the sweetening procedure has been carried out (1, 12).

The Solutizer process accomplishes sweetening of the gasoline by extracting the mercaptans completely, using a "solutized" caustic solution, i.e., one of high solvency power. Since the mercaptans are removed from the gasoline in this case, rather than converted to other sulfur compounds which are equally bad or even worse than those originally present, it is to be expected that solutizer sweetening will result in an improvement in octane number and lead susceptibility as compared to the sour gasoline. A few data were presented (14) indicating that such is the case. We have since had the opportunity to examine a fairly large number of gasoline samples differing in type and origin, and the results obtained are presented in this paper.

Properties of the sour gasolines as received are given in Table 1. These include the A.S.T.M. distillation, A.P.I. gravity, bromine number, and sulfur contents. The straight run gasolines represent samples from West Texas, New

*Shell Development Co., Emeryville, Cal.

TABLE 1

Properties of Untreated (Sour) Gasolines

Type of gasoline	Item No.	A.S.T.M. distillation, °F. IBP	10%	50%	90%	FBP	API gravity	Bromine No. (9)	Sulfur, % wt. Total	Sulfur, % wt. Mercaptan (13)
Straight run	1	91	108	143	226	293	79.3	1.3	0.466	0.172
	2	119	163	225	314	383	68.2	1	0.192	0.073
	3	120	160	208	270	320	68.7	0.2	0.018	0.005
	4	104	159	237	318	370	64.9	2.2	0.033	0.006
	5	113	164	226	293	351	62.6	0.8	0.112	0.052
	6	119	166	216	271	307	64.9	0.4	0.090	0.042
	7	118	178	279	403	433	59.4	13	0.115	0.042
	8	119	156	194	234	261	64.5	...	0.064	0.020
Cracked	9	115	159	270	374	398	57.9	88	0.217	0.082
	10	98	162	270	354	385	59.3	61	0.164	0.058
	11	92	108	136	187	245	77.9	93	0.292	0.184
	12	92	131	239	339	378	62.5	83	0.282	0.111
	13	105	141	231	361	410	61.1	..	0.062	0.019
	14	189	219	242	278	309	54.7	89	0.83	0.089
	15	95	136	262	369	412	57.8	74	0.137	0.034
	16	147	203	289	374	415	51.3	62	0.352	0.046
	17	109	158	260	354	389	57.9	92	0.128	0.037
	18	112	159	249	344	402	59.3	100	0.067	0.019
	19	98	147	263	385	435	55.9	74	0.303	0.090
	20	107	163	283	380	406	57.4	72	0.084	0.021
	21	93	144	270	357	381	56.6	77	0.645	0.099
	22	95	132	270	374	398	60.1	82	0.305	0.117
	23	99	127	241	378	410	59.8	91	0.135	0.022
	24	97	146	266	364	396	57.1	70	0.239	0.042
	25	140	191	250	325	384	54.4	74	0.186	0.035
Blend of cracked and straight run	26	105	145	241	332	377	60.9	44	0.090	0.022
	27	103	148	249	343	385	59.6	31	0.186	0.056
	28	111	164	259	353	388	60.7	38	0.093	0.016
Catalytic polymer	29	79	98	200	406	414	75.8	116	0.47	0.193
	30	84	114	216	360	414	71.1	157	0.138	0.045
Reformed	31	116	178	274	350	396	52.7	43	0.130	0.059
Averages—Items 1-8 incl.									0.136	0.046
Items 9-25 incl.									0.261	0.065
Items 1-31 incl.									0.214	0.060

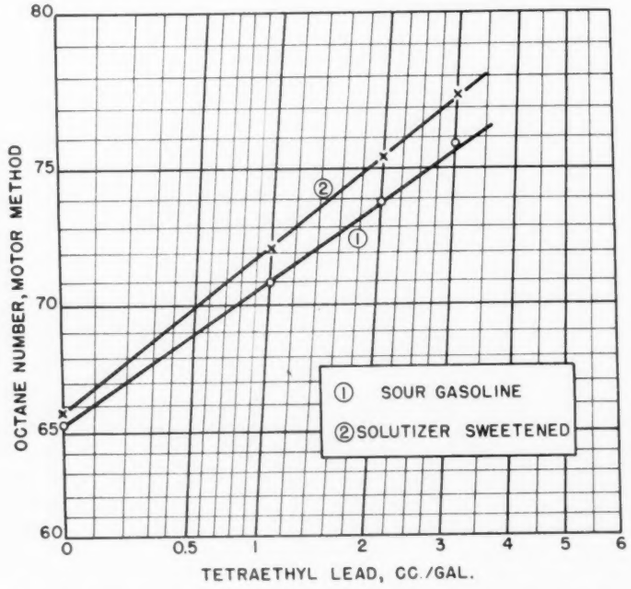

Fig. 1—Average octane numbers for 31 different gasolines showing the improvement in octane number and lead susceptibility resulting from solutizer sweetening

IS A LOT OF *Salt*

Few people realize the vast amount of impurities contained in crude petroleum. Crude oil as a source of salts in any considerable quantity might seem to be rather far fetched. Yet the salt content of the crude charged to one group of Petreco Electromatic De-Salting Plants during one month's operation amounted to 323 tons, or at the rate of 3,876 tons per year.

These salts are the cause of endless refining difficulties and expense when not removed from crude charging stocks. They also effect the quality of refined and residual products. Efficient de-salting of the crude before entering the refinery has proved to be tremendously profitable to many refiners.

All crude charging stocks should be tested carefully for salt content. Where proper facilities for testing are not available, samples of the oils should be submitted to the Petreco laboratory for the purpose. Complete field and laboratory cooperation, and Petreco's preliminary advisory service are available without cost or obligation.

Write for Bulletin "Determination of Salts in Crude Oils," a valuable aid to refiners.

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Mexico, Pennsylvania, and the Mid-Continent. The cracked gasolines represent samples from California, Montana, Arkansas, and Louisiana, in addition to those sections listed above.

A portion of each sample was sweetened with solutizer in the laboratory in the following manner. The gasoline was cooled to 0°C. and successively extracted in a separatory funnel with fresh 10% or 20% volume batches of precooled solutizer solution (6N potassium hydroxide, 3N potassium isobutyrate) until a sweet doctor test was obtained. In general, the gasoline was sweetened by two or three extractions. The sweetened gasoline was then filtered and immediately inhibited with 0.1 gram of α-naphthol per liter in order to prevent any deterioration prior to further testing.

To minimize oxidation during the period of extraction, the air in the separatory funnel was displaced by nitrogen, and the entire procedure was carried out in the course of an hour's time or less. It has been our experience that gasolines of less than about 10 pounds Reid vapor pressure can be treated in this manner with a negligible loss of light ends. Nevertheless, for the purpose of the ensuing octane comparison between the solutizer sweetened and sour samples, a portion of the latter was put through an identical extraction procedure, substituting water for solutizer solution.

Octane number determinations were carried out in accordance with A.S.T.M. method D357-38T in the presence of 0, 1, 2, and 3 cc. of tetraethyl lead (TEL) per gallon. At each lead concentration, the sour and solutizer sweetened samples were directly compared in the engine, thus allowing the detection of differences as small as 0.2 octane numbers, as set forth in Sections 14(b) and 16 of the A.S.T.M. procedure. In this way, a reliable determination of the effect of solutizer sweetening, as compared to the sour gasoline, was obtained.

The results for the various gasolines are presented in Table 2. The octane number of the sour gasoline is given to the nearest half unit, while the difference in octane number between the solutizer sweetened and sour

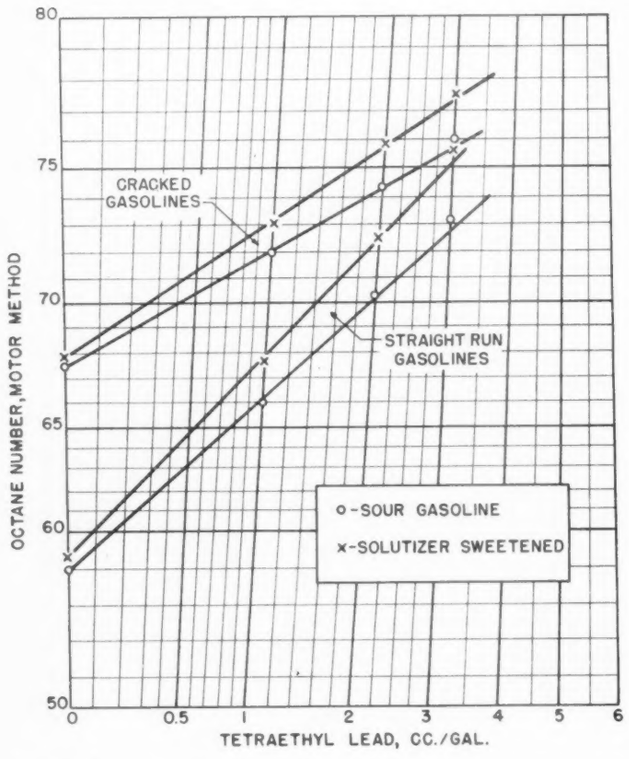


Fig. 2—Average octane numbers for 17 cracked gasolines and for eight straight run gasolines showing the improvement in octane number and lead susceptibility resulting from solutizer sweetening

TABLE 2

Effect of Solutizer Sweetening on Octane Number and Lead Susceptibility

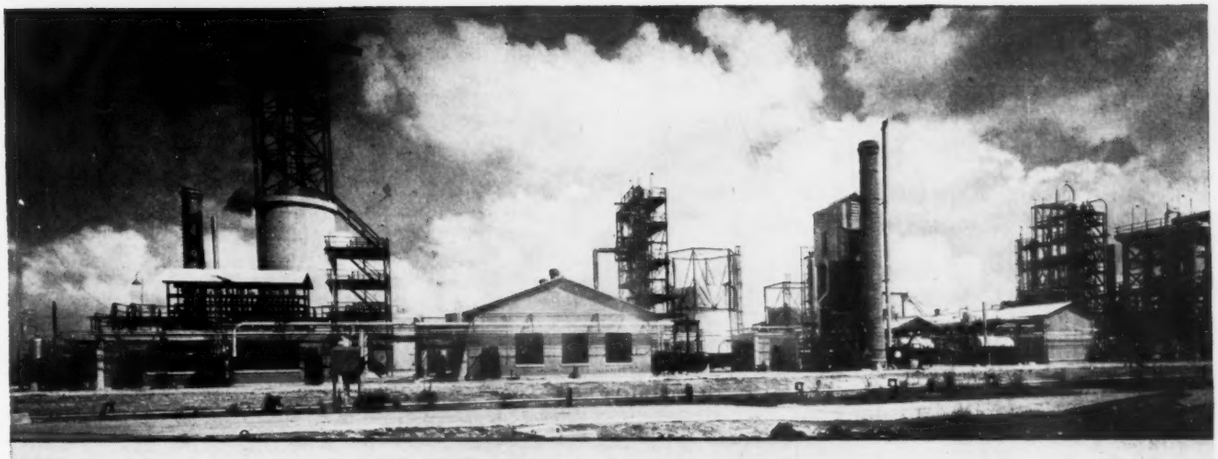
Type of gasoline	Item No.	Octane number of untreated (sour) gasoline, Motor method: Unleaded	plus 1 cc. TEL	plus 2 cc. TEL	plus 3 cc. TEL	Increase in octane number (Motor method) resulting from solutizer sweetening: Unleaded	plus 1 cc. TEL	plus 2 cc. TEL	plus 3 cc. TEL
Straight run	1	65.0	70.5	73.5	75.5	2.0	3.2	4.2	3.9
	2	45.5	52.5	57.0	61.0	1.2	1.4	1.9	1.2
	3	60.5	70.5	75.5	78.5	0	0.7	0.8	1.3
	4	53.0	63.5	69.5	73.0	0.6	0	0	0.3
	5	63.5	71.5	75.0	77.5	0.4	2.5	3.0	3.3
	6	62.0	68.5	73.0	75.5	0.7	2.4	2.1	2.4
	7	43.5	51.5	57.0	60.5	0.3	2.5	3.6	4.3
	8	70.5	78.5	82.0	84.0	0	1.0	1.2	1.5
Cracked	9	63.0	68.5	70.5	72.0	0.4	1.7	2.0	2.8
	10	63.0	68.5	71.5	74.0	0.5	1.4	1.9	1.4
	11	75.5	78.0	....	81.5	0.8	2.6	....	2.4
	12	70.5	75.0	76.5	78.0	0	1.4	2.3	2.3
	13	62.5	69.5	73.0	75.0	0.2	0.5	0.5	0.6
	14	70.0	72.0	....	74.5	0.2	1.3	....	1.7
	15	72.0	74.0	75.5	....	1.0	1.3	1.2	....
	16	64.5	69.5	72.0	73.5	0	0.6	0.6	0.4
	17	65.0	71.0	73.0	75.0	0.5	0.9	1.0	1.3
	18	66.0	72.0	75.5	77.5	0.4	1.2	1.6	1.5
	19	70.0	72.5	75.5	76.5	0.5	1.0	1.3	2.5
	20	59.5	66.5	70.0	73.0	0	1.0	2.0	1.5
	21	69.5	72.0	....	75.5	0.2	0.6	....	0.7
	22	67.5	71.5	....	75.5	0.8	2.0	....	2.7
	23	70.0	75.0	77.0	79.0	0	1.3	1.2	1.1
	24	70.0	74.0	76.5	77.5	0	0.7	1.0	0.9
	25	68.0	73.0	....	77.5	0.4	1.0	....	1.0
Blend of cracked and straight run	26	67.0	73.5	77.0	79.0	0.9	1.0	1.1	0.6
	27	67.0	73.0	75.5	77.5	0	1.4	1.9	2.0
	28	58.0	65.5	70.0	72.5	0.2	0.7	0.9	0.7
Catalytic polymer	29*	70.0	75.0	77.0	78.5	0.4	1.4	1.7	2.0
	30	82.5	84.0	85.0	84.5	0.3	0.3	0.3	0.7
Reformed	31	69.0	75.0	78.0	79.0	0.4	0.9	1.1	1.6
Averages									
Items 1-8	incl.	57.9	65.9	70.3	73.2	0.65	1.71	2.10	2.28
Items 9-25	incl.	67.4	71.9	74.3	75.9	0.35	1.21	1.46	1.55
Items 1-31	incl.	65.3	70.8	73.8	75.7	0.43	1.29	1.57	1.68

*Octane numbers obtained for a 1-1 blend with A-5 reference fuel. Octane number of reference fuel = 40.5.

TABLE 3

Comparison of TEL Requirements of Sour and Solutizer Sweetened Gasolines

Type of gasoline	Item No.	cc. TEL/gallon required for solutizer sweetened gasoline to give the same octane number as the sour gasoline containing various amounts of TEL: 0.5 cc. TEL/gal. in sour gasoline	1 cc. TEL/gal. in sour gasoline	2 cc. TEL/gal. in sour gasoline	3 cc. TEL/gal. in sour gasoline	Savings in TEL resulting from solutizer sweetening, compared with the sour gasoline, percentage: 0.5 cc. TEL/gal. in sour gasoline	1 cc. TEL/gal. in sour gasoline	2 cc. TEL/gal. in sour gasoline	3 cc. TEL/gal. in sour gasoline	Mean
Straight run	1	0.13	0.36	0.86	1.32	74	64	57	56	62.8
	2	0.37	0.70	1.55	2.25	26	30	22.5	25	25.9
	3	0.45	0.80	1.78	2.62	10	20	11	12.7	13.4
	4	0.43	0.91	1.86	2.78	14	9	7	7.3	9.3
	5	0.32	0.64	1.27	1.80	36	36	36.5	40	37.1
	6	0.30	0.65	1.34	1.02	40	35	33	36	56.0
	7	0.33	0.68	1.33	1.95	54	32	33.5	35	33.8
	8	0.42	0.82	1.60	2.29	16	18	20	23.7	19.4
Cracked	9	0.29	0.62	1.22	1.77	42	38	39	41	40.0
	10	0.33	0.70	1.43	2.08	34	30	33.5	30.7	32.0
	11	0.16	0.34	0.76	1.11	68	68	62	63	65.3
	12	0.31	0.60	1.13	1.61	38	40	43.5	46.3	42.0
	13	0.44	0.90	1.81	2.68	12	10	9.5	10.7	10.5
	14	0.25	0.49	1.00	1.44	50	51	50	52	50.8
	15	0.10	0.35	0.91	1.42	80	65	54.5	52.7	63.0
	16	0.45	0.89	1.76	2.60	10	11	12	13.3	11.6
	17	0.35	0.76	1.57	2.30	30	24	21.5	23.3	24.7
	18	0.36	0.75	1.52	2.22	28	25	24	26	25.8
	19	0.26	0.58	1.21	1.79	48	42	39.5	40.3	42.5
	20	0.41	0.81	1.57	2.26	18	19	21.5	24.7	20.8
	21	0.37	0.78	1.59	2.31	26	22	20.5	23	22.9
	22	0.22	0.49	1.04	1.52	56	51	48	49.3	51.1
	23	0.39	0.76	1.49	2.10	22	24	25.5	30	25.4
	24	0.41	0.71	1.60	2.28	18	29	20	24	22.8
	25	0.35	0.75	1.54	2.27	30	25	23	24.3	25.6
Blend of cracked and straight run	26	0.55	0.77	1.68	2.51	34	23	16	16.3	22.3
	27	0.35	0.71	1.35	1.92	30	29	32.5	36	31.9
	28	0.44	0.89	1.78	2.67	12	11	11	11	11.3
Catalytic polymer	29	0.30	0.65	1.27	1.81	40	37	36.5	39.7	38.3
	30	0.29	0.68	1.65	2.25	42	32	17.5	25	29.1
Reformed	31	0.36	0.75	1.53	2.22	28	25	23.5	26	25.6
Averages—										
Items 1-8	incl.	0.34	0.70	1.46	2.12	31.3	30.5	27.6	29.5	29.7
Items 9-25	incl.	0.32	0.66	1.36	1.99	35.9	33.7	32.1	33.8	33.9
Items 1-31	incl.	0.33	0.69	1.42	2.07	33.8	31.4	29.2	31.1	31.4



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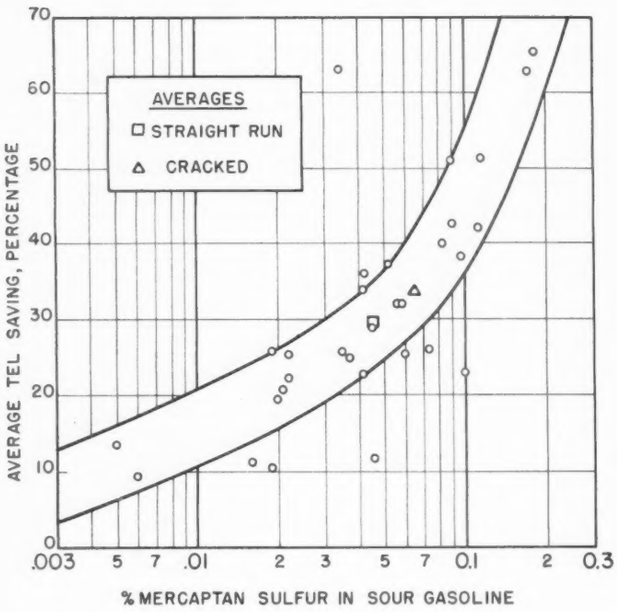

Fig. 3—Average TEL saving as a function of the per cent mercaptan sulfur in the sour gasoline

gasoline is reported in tenths of units. It will be noted that in every case the octane number was improved as a result of solutizer sweetening, or else unchanged. The average increase in unleaded octane number for the 31 samples was 0.42 units, and with 1, 2, and 3 cc. TEL per gallon, the corresponding increases were 1.29, 1.57, and 1.68 octane numbers. The average octane increase was somewhat greater for the straight run gasolines (items 1-8) than for the cracked gasolines (items 9-25). The average octane numbers of all the gasolines are plotted on an ethyl blending chart (5) shown as Fig. 1, while the averages for the cracked and for the straight run gasolines are shown in Fig. 2.

Plots, similar to those of Fig. 1 and 2, were prepared for each gasoline, and the amounts of TEL that had to be added to the solutizer sweetened gasoline in order to match the octane number of the sour gasoline doped with 0.5, 1, 2, and 3 cc. of TEL per gallon, respectively, were determined. This is shown in Table 3 which includes also the percentage saving in TEL as a result of solutizer sweetening, compared to the sour gasoline. The mean percentage saving, shown in the last column of the table, is the average of the values at the four lead concentrations. These values vary considerably for the different gasolines (9.3 to 65.3%), but appear to be correlated with the mercaptan content of the sour gasoline. This is illustrated by Fig. 3 where the mean TEL saving is plotted against the logarithm of the mercaptan concentration. On the whole, the points fall within or close to the smooth band. It may be noted that the mean TEL saving appears to be substantially the same for the cracked and straight run gasolines for a given mercaptan concentration, as shown by the average points for each type of gasoline plotted in Fig. 3.

In comparing the quantity of lead that must be added to the sour and to the solutizer sweetened gasolines to obtain equivalent octane numbers, the percentage saving in TEL, resulting from the solutizer sweetening of a given gasoline, is roughly independent of the quantity of TEL used, as shown by the last five columns of Table 3. The actual saving in TEL, expressed either as cc. per gal. or as cents per bbl., however, will of course depend on the extent to which the octane number of gasoline is to be raised by leading. Comparing the amounts of TEL required for the sour and for the solutizer sweetened gasolines in order to obtain an octane number five units higher, for example, than that of the untreated (sour) gasoline, it is found that the actual saving in TEL, resulting from

TABLE 4

Comparison of TEL Requirements of Sour and Solutizer Sweetened Gasolines

Type of gasoline	Item No.	TEL required to obtain an octane number 5 units higher than that of the sour gasoline, cc./gal. For sour gasoline	For solutizer sweetened gasoline	TEL saving resulting from solutizer sweetening, compared to sour gasoline cc./gal.	c/bbl. (at 0.25c/cc.)
Straight run	1	0.83	0.28	0.55	5.78
	2	0.60	0.38	0.22	2.31
	3	0.34	0.30	0.04	0.32
	4	0.32	0.27	0.05	0.53
	5	0.50	0.32	0.18	1.89
	6	0.57	0.35	0.22	2.31
	7	0.50	0.34	0.16	1.68
	8	0.47	0.38	0.09	0.95
Cracked	9	0.98	0.67	0.31	3.26
	10	0.80	0.55	0.25	2.63
	11	2.50	0.94	1.56	16.4
	12	1.37	0.80	0.57	5.99
	13	0.60	0.52	0.08	0.84
	14	4.45	2.05	2.40	25.2
	15	4.70	2.30	2.40	25.2
	16	1.00	0.89	0.11	1.16
	17	0.84	0.63	0.21	2.21
	18	0.66	0.48	0.18	1.89
	19	1.70	1.03	0.67	7.04
	20	0.56	0.46	0.10	1.05
	21	2.39	1.92	0.47	4.94
	22	1.30	0.66	0.64	6.72
	23	1.00	0.76	0.24	2.52
	24	1.22	0.96	0.26	2.73
	25	0.93	0.70	0.23	2.42
Blend of cracked and straight run	26	0.63	0.44	0.19	2.00
	27	0.79	0.55	0.24	2.52
	28	0.49	0.43	0.06	0.63
Catalytic polymer	29	1.05	0.67	0.38	3.99
	30	6.0	6.0	....	....
Reformed	31	0.74	0.55	0.19	2.00
Averages—					
Items 1-8 incl.		0.48	0.32	0.16	1.68
Items 9-25 incl.		1.17	0.78	0.39	4.10
Items 1-31 incl.		0.81	0.57	0.24	2.52

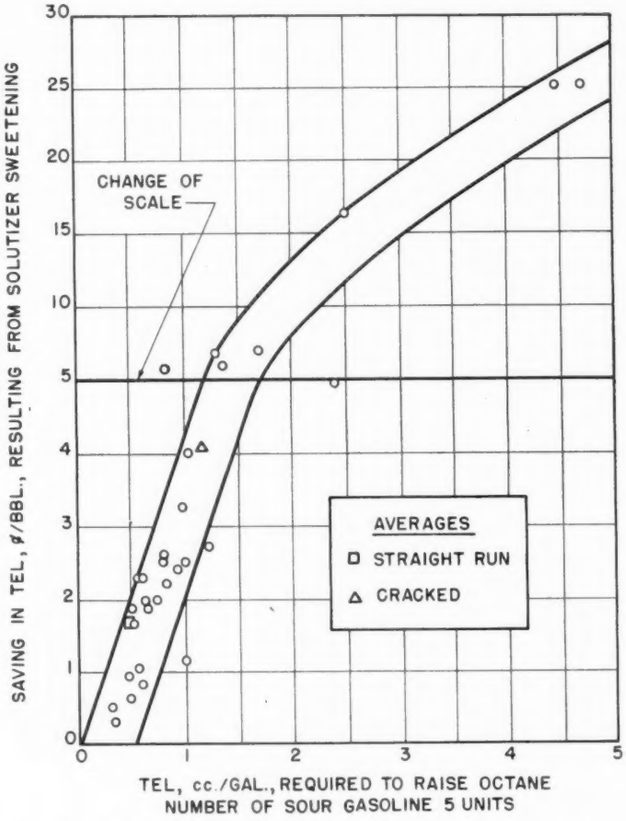
CHANGE OF SCALE
AVERAGES
STRAIGHT RUN
CRACKED
SAVING IN TEL, ¢/BBL., RESULTING FROM SOLUTIZER SWEETENING
TEL, cc./GAL., REQUIRED TO RAISE OCTANE NUMBER OF SOUR GASOLINE 5 UNITS

Fig. 4—TEL saving, as cents per barrel at 0.25c per cc., as a function of the lead required to raise the octane number of the sour gasoline five units

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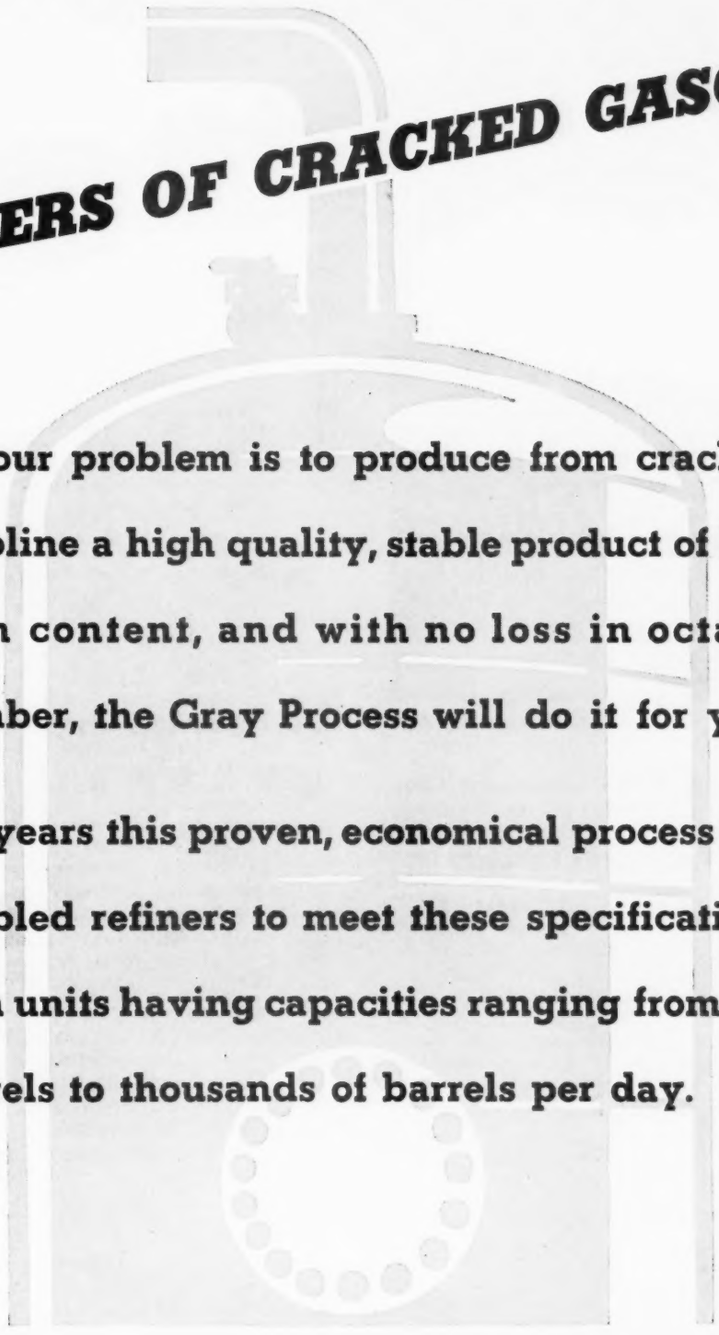

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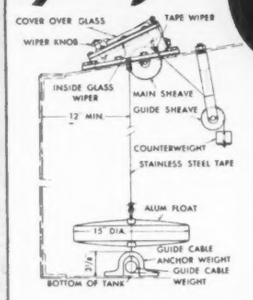

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solutizer sweetening, is now a function of the quantity of TEL required for leading the untreated gasoline. This is is shown by the data of Table 4 which are plotted in Fig. 4. Thus, if the sour gasoline required 0.5, 1.0, or 1.5 cc of TEL per gal. in order to raise the octane number five units, solutizer sweetening plus leading to the same octane number would result in a lead saving (at 0.25c per cc) amounting to about 1, 3, or 5c per bbl., respectively.

In all of the above cases, we have compared the lead response of the solutizer sweetened gasoline with that of the untreated gasoline. If, however, solutizer sweetening were compared with sweetening methods that convert mercaptans substantially to disulfides, the lead savings illustrated in Fig. 3 and 4 would be appreciably increased in many cases.

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To Examine Analytical Methods In N. G. A. A. Research Project

A STUDY of present apparatus and procedure used in making low temperature fractional analyses of gases and liquids is being sponsored by the Natural Gasoline Association of America, according to George P. Bunn, Phillips Petroleum Co., president of the association. It is aimed to enable more nearly duplicable results between various company laboratories.

The study will take the form of a co-operative project in which both member and non-member companies will take part. Fifteen individual company laboratories will alternate in furnishing all the other laboratories with identical samples of the material to be analyzed and the resulting analytical data will be compiled and studied by the Technical Committee of the association under the direction of chairman C. R. Williams, Continental Oil Co., Ponca City, Okla.

In discussing the project, President Bunn said the association is merely continuing its policy of trying to improve the test methods and procedure of standards within the industry. "Answers to a questionnaire circulated by the association last year," said Mr. Bunn, "indicated that there were many minor differences in analytical apparatus used by different laboratories and that there were differences of opinion on procedure. While few of these things are particularly significant in themselves, it is felt that they cause unnecessary confusion in the industry by making it difficult for laboratories to check each other exactly when analyzing identical materials."

Companies participating in the project are: Carter Oil Co., Continental Oil Co., Hanlon-Buchanan, Inc., Humble Oil & Refining Co., Indian Territory Illuminating Oil Co., Lone Star Gasoline Co., Phillips Petroleum Co., Pure Oil Co., Shell Oil Co. Inc., Sinclair-Prairie Oil Co., Skelly Oil Co., Stanolind Oil & Gas Co., Texas Co. of Cal., United Gas Pipe Line Co., and Warren Petroleum Corp.

An Interview . . .

With Fred B. Koontz, Vice President in Charge of Refining for Mid-Continent Petroleum Corp.

By Allen S. James

N. P. N. Staff Writer

Mid-Continent Petroleum Corp., which operates one of the largest independent refineries in the Mid-Continent field, announced recently a construction program to cost $2,500,000. The expansion will include a catalytic cracking unit, reforming unit, catalytic polymerization unit, and new type wax plant developed recently by the Lummus Co. Completion of a $1,500,000 expansion and improvement program in the lubricating oil process department, has recently been completed.

In charge of refining for this company is Vice President Fred B. Koontz whose picture appears on the front cover of this issue. It was in 1917 that Fred Koontz, working in California, heard about the young Cosden & Co. of Tulsa. He applied for a job, got it and joined the company as process superintendent. The plant at that time had six crude stills, four steam stills and a small boiler house. Today the refinery site consists of 800 acres, with a complete refinery capable of processing 40,000 barrels of crude daily.

Koontz is the son of a West Virginia banker and grandson of an Army captain. He started his education in a military academy, with his sights set on West Point and an army career. Countless hours he had sat as a boy on a footstool at the feet of his grandfather and listened to tales of army life.

Somewhere along the line young Koontz became sidetracked and decided, at the age of 18, to begin making some money of his own in a hurry. The oil business in Mexico appeared attractive in 1907 and he set sail for Tampico. There he obtained a job in the laboratory of the old Waters-Pierce Oil Co.'s refinery.

Three revolutions later and after several months of traveling with and taking instructions from Pancho Villa, Fred Koontz left Mexico and traveled to California where he got a job in the production and pipe line department of the Standard Oil Co. of California. He was placed in charge of a thousand teamsters who were excavating for the huge concrete oil storage pits then being built by that company. Koontz had to see that those teamsters were fed and housed and kept working.

Koontz worked in various departments of several companies on the Pacific coast, at one time being the night superintendent—and crew—for a small lubricating oil refinery. He worked from 5 p.m. until 7 a.m., and on weekends cleaned the boilers and rolled the tubes. If he had any spare time at night he glued barrels.

Then came a period of several months when he and Mrs. Koontz lived in a tent on the desert while he and others drilled what they hoped would be their gusher. The hole was dry every inch of the way down, Koontz says, and he came out of that venture with $4.65 and no job.

"That's where I began to get my real education," Koontz says. "For sixteen months and three weeks I was on the pick and shovel gang at a refinery. I learned to sweat. I sweat harder while I was working extra at nights as a stevedore."

Koontz also become quite a boxer during that period.

After he became affiliated with the present Mid-Continent organization he formed an athletic club, built a clubhouse and encouraged the workmen to avail themselves of its facilities.

Koontz' major hobby is breeding race horses. For several years he had a string of race horses running at the larger tracks but some time ago abandoned his farm near Tulsa and transferred his stock to the Military Stock Farm in Kentucky, in which he has a partnership interest.

Boys also are a major interest to Fred Koontz. He started the practice a few years ago of giving summer employment to the sons of company employes. Before he would employ a boy, however, Koontz made it clear just what he expected that boy to do with the money he earned. The boy had to agree to show Koontz at the end of the summer receipts for a suit of clothes, an overcoat, a hat, shoes and then he had to buy his school books. The remainder of the $150 to $200 the boy earned during the summer was his to spend as he pleased.

Refinery Power Plant Is Conference Topic

Power for the Refinery is one of the subjects to be discussed at the Midwest Power conference to be held here April 9 and 10. Armour Institute of Technology, in co-operation with seven middle western universities and colleges and several local and national technical societies, is sponsoring the conference.

A feature of the conference will be an economic comparison of diesel and steam units in small power plants. Both of these subjects are scheduled tentatively for the afternoon of April 9. On the following morning the fuel problems of power plants, particularly gas and coal, will be presented.

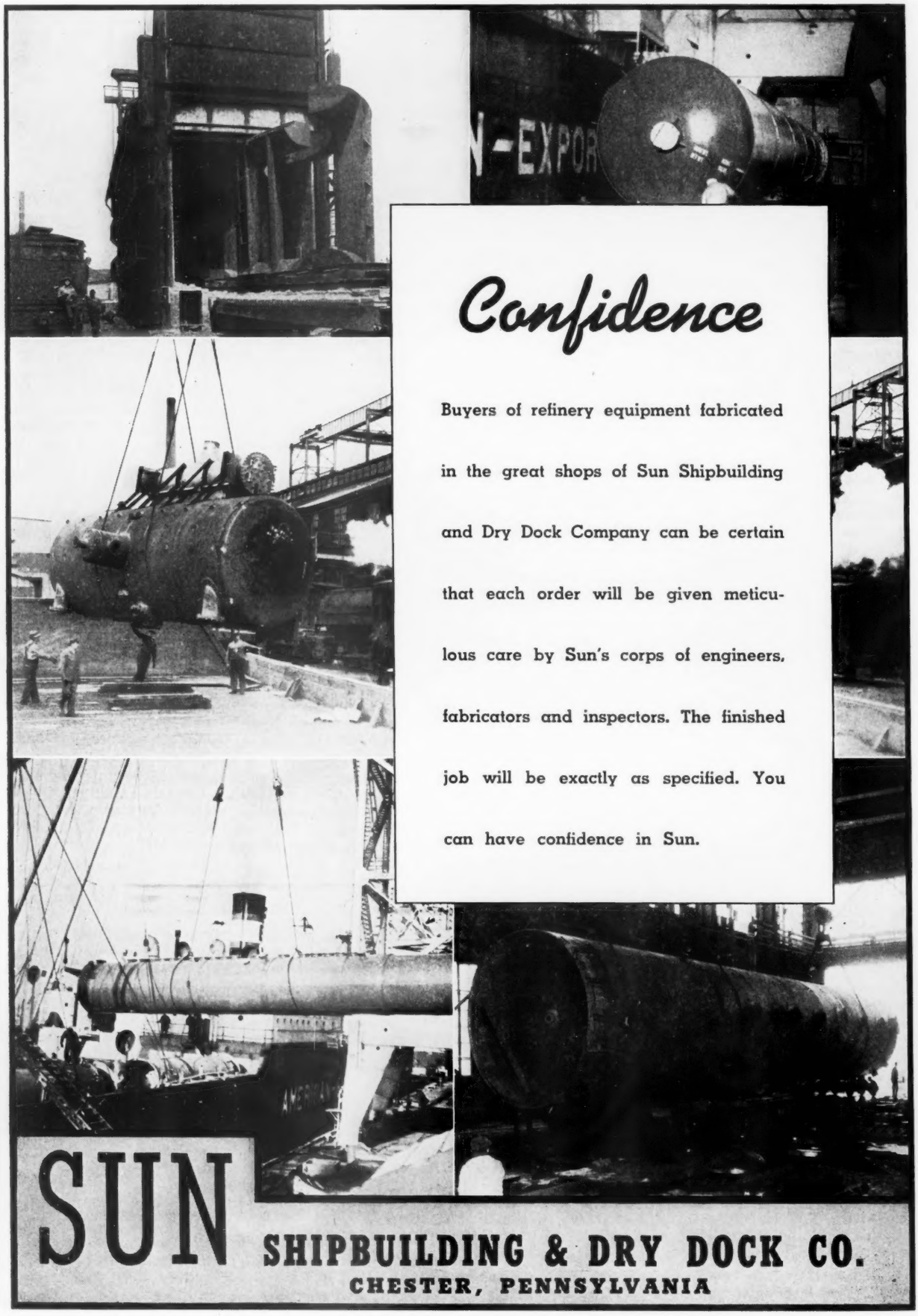
Distillation Symposium

A technical meeting attended by 16 representatives of the technical staffs of licensees of Petroleum Distillation Corp. was held in the offices of Standard Oil Development Co. Feb. 5 and 6. Technical problems relating to fractional distillation of petroleum and its products were discussed in connection with the presentation of seven technical papers. Other meetings are planned for the future to take further mutual advantage of the wide scope of available experience and data.

R. P. Anderson, secretary, Division of Refining, American Petroleum Institute, was elected chairman of the Standards Council of the American Standards Association, at its annual meeting held recently in New York City.

Perco Licensing Agreement Widened

Perco Inc., Bartlesville, Okla., has appointed The Lummus Co. licensing agent on a non-exclusive basis in Canada and the United States for Perco Catalytic Desulfurization, Catalytic Dehydrogenation and Copper Sweetening. Formerly Lummus was licensing agent in certain areas of the United States only.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Carolina Marketers' Head Urges Spring Change-Over Campaign

THE Spring Change-Over is technically sound for the motorist, for the protection of his car, and can be best sold on that basis, is the message to oil marketers of J. H. Parker of New Bern, N. C., president of the North Carolina Oil Jobbers Association.

His message comes out of years of experience in first operating a service station, later running his own oil marketing company, the Coastal Petroleum Co. This message is one of several from the presidents of active marketing associations that NATIONAL PETROLEUM NEWS will publish in its own Spring Change-Over campaign, to make the oil company's Change-Over servicing most successful.

By J. H. Parker
President, North Carolina Independent Oil Jobbers Association.

● Advocating Spring Change-Over is sound not only from a business standpoint but from a technical standpoint. The Change-Over is essential to the proper functioning and longer life of an automobile.

This is the golden opportunity for the independent marketer to sell his product on its merit and the necessity for that product and not on a price basis. It will of course take sales effort, but anything that is really worth while is worth working at. Build up that Change-Over business this Spring and watch the repeat business flow in when Fall Change-Over time arrives.

It is not as difficult to work up this profitable Change-Over business as might be imagined. Educate yourself and your dealers to mention the approach of Spring to all customers and expand on the subject of what change in climate means to the functioning of their machine. Tell of the necessity for maintaining the proper grade of oil in crankcase, transmission and differential. Bring out that time and travel contaminate the oil in these units and that this contamination causes wear in this motor, and may result in expensive repairs that will far outweigh the costs of a Change-Over.

THE average person thinks a great deal of his car and will listen, because he is being **told how to save.** Always remember that your customer is interested in saving money and avoiding troublesome experiences with his car. Bear down heavily on these saving aspects of the Change-Over.

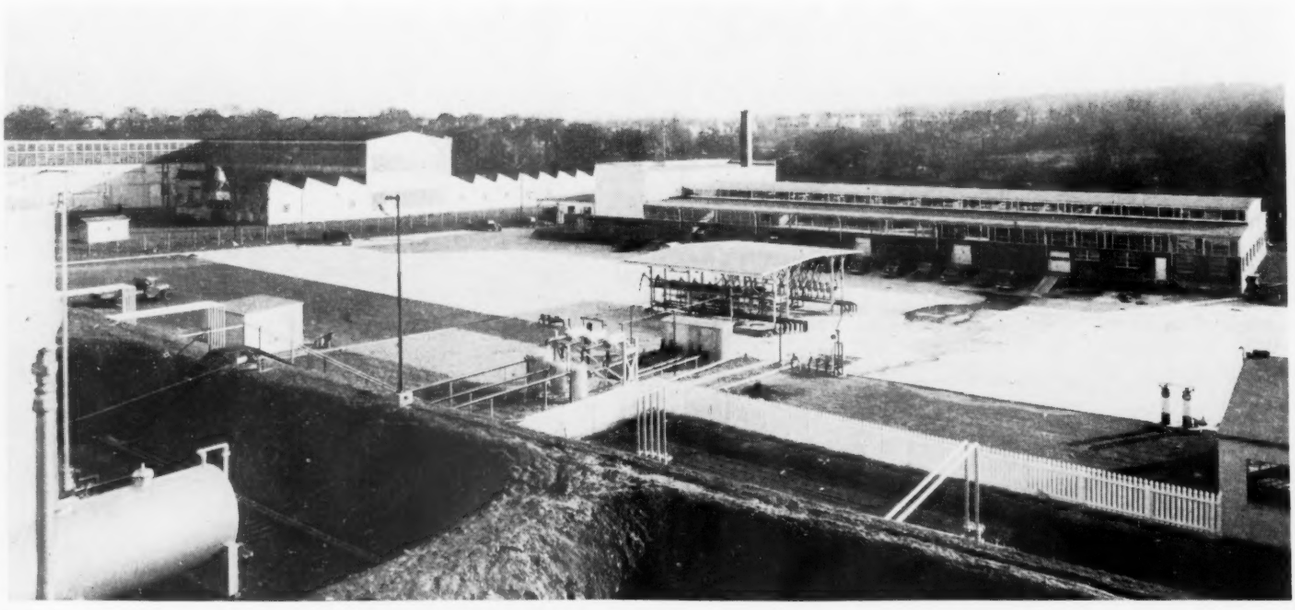
One word of caution. Don't be monotonous. Have something new and interesting to tell your customer each time he enters your station. The subject of Change-Over is a big one and should supply enough material for a continuous sales program. Thus, the customer is prepared for the Spring Change-Over and has the expense factor minimized in his mind.

In addition to these efforts the dealer should display prominently the various oils used in Change-Over. He should have his hypoid and heavy gear oils out where they can be seen and lead to questions from potential customers, or give the attendant a leader for his sales talk on Change-Overs. The dealer, in addition, should make proper use of the materials given him by his supplier.

Posters, advertising matter, and handouts should be fully taken advantage of, for every angle of attack helps in reaching the ultimate goal, the customer Change-Over.

In addition, the Spring Change-Over is the ideal opportunity for lubrication work, tire sales and accessory sales. There actually is no limit to the sales possibilities of the season. Take advantage of all of them and the profits will take care of themselves.

Product Movement Streamlined In Modern Bulk Plant



Gravity flow of refined products from a tank yard located 20 feet above grade in the loading yard, reduces handling costs at Sohio's new Cincinnati distributing plant. Special settling tanks, or traps, are shown in three flow lines just ahead of air separators and meter house. One of the tanks in the tank yard is shown in the left foreground

LOWER handling costs and greater operating flexibility are featured in combined bulk station, warehouse and division office accommodations recently completed by Standard Oil Co. of Ohio at Cincinnati, a short distance across the Ohio river from the company's Latonia refinery.

Designed for a refined product throughput of approximately 2,250,000 gallons a month, this plant is a terminal for pipelines from the refinery. In addition to supplying a large fleet of route and dispatch trucks for wholesale distribution, it will also be the focal point for transport units supplying smaller bulk stations within a radius of about 40 miles.

It will serve a territory formerly supplied by three small bulk stations and a part of the Cheviot territory. However, a bulk station at Cheviot, also on the refinery pipeline, will continue to serve customers in that area.

For the oil marketer faced with the problem of moving a large volume of products into a concentrated area with maximum efficiency and minimum handling costs, this plant holds particular interest. Pre-construction analysis has permited topographical advantages of the site itself to be used in reducing pumping costs. Combined with this is provision for accurate check of the volume-products handled and for arrangement of facilities to aid fast and efficient movement of all products from one end of the plant to the other.

Dimensions of the new property are 450 by 1050 feet—approximately 10 acres. A site was selected which made it possible to locate the tank yard for refined products on high ground at the rear of the property, so that the tank bottoms were approximately 21 feet above grade in the loading yard. This difference in elevation provides sufficient head, even when storage is low, for full gravity loading at the rack and practically eliminates pumping costs.

There are 18 tanks for refined product storage in this elevated yard, including provision for three grades of gasoline and furnace oil, kerosine, aviation gasoline, naphthas, solvents and other special products. Total existing capacity of this tankage is 1,549,000 gallons. However, there is room for the addition of up to 1,600,000 gallons of capacity, as needed.

Vapor saving pontoon roofs are used on two 400,000-gallon tanks—for house brand gasoline—and one 250,000-gallon unit for premium-grade gasoline. These and the storage for kerosine are filled by pipeline from Latonia refinery. Supplies of third-grade gasoline and furnace oils are moved into the plant from the refinery by transport truck, and the other products are

shipped in by tank car. Emergency connections are also provided for transport delivery of the gasolines and kerosine normally moved by pipeline.

In this plant, where distribution of refined products alone will exceed 80,000 gallons a day, particular attention was given to design and arrangement of loading and handling facilities to permit uninterrupted flow of all products. An example of the extent to which the plant was engineered from the ground up is illustrated in the "double-double" loading rack.

LOCATED in the center of a large, concrete-paved yard, yet within comparatively short pipeline distance of the bulk storage, this facility affords plenty of elbow room on all sides for easy movement of trucks to and from the multiple fast-delivery loading positions, thereby eliminating congestion and reducing idle time of the distributing equipment.

The rack is 57 feet 6 inches wide and 44 feet deep, with four loading platforms extending the full depth, each of which will permit two tank trucks to load at one time. A complete transport, including semi-trailer and four-wheel trailer, and six tank trucks can be loaded simultaneously without re-spotting.

One of the four loading platforms is designed primarily for servicing the 6200-gallon truck and trailer transports, with the deck 8 feet six inches above the runway and extending two feet out from the rack so as to give easy access on and off the truck. The big units have no difficulty in coming alongside this platform, which is on the outside of the rack nearest the tank yard. Platforms on the other three sides are three feet six inches above grade.

Except for the 2 by 12-inch wood planking used in the platforms to provide a non-skid surface, the rack is all-steel construction, with all members, supports and piping designed to give a free flow of air under and around the rack both to reduce the fire hazards and to make it easier to keep clean.

Piping for products loaded at this unit was arranged to speed truck movement, by designating specific lanes for various types of delivery equipment. In addition to the trarsport loading side, the two inside lanes fill load requirements of the fleet of route and dispatch trucks of 800 to 2500-gallons capacity. The fourth side is given over to the slower loading of the numerous special products. One load arm for regular-grade gasoline is also provided here.

FAST delivery of products into the distributing equipment has been achieved in this gravity system. Numbering the racks, or platforms, 1, 2, 3 and 4 consecutively, starting with the transport side as No. 1, the piping arrangement is as follows:

The regular grade gasoline line from tanks to rack is 8 inches in diameter with an 8-inch header to No. 1 and No. 2 platform and 4-inch headers to platforms 3 and 4. All load arms are 3-inch. Capacity of the line is 1000 to 1100 gallons per minute. Capacity of 3-inch load arms, even when all are being used, is 250 to 300 gallons per minute.

Lines for the premium grade gasoline and for kerosine to the rack are 6-inch, with 6-inch headers to platforms 1 and 2 and 4-inch headers to 3 and 4. Load arms are 3-inch and the discharge capacity is 500 g.p.m. Other products, including third-grade and aviation gasolines, furnace oils and special products have 4-inch lines to the rack, 4-inch headers and 3-inch load arms.

Special dirt and moisture trap tanks, designed by the company, are connected into the three lines equipped with meters. On the 8-inch regular-gasoline line, the tank capacity is 500 gallons and on the premium-grade and kerosine lines it is 250 gallons.

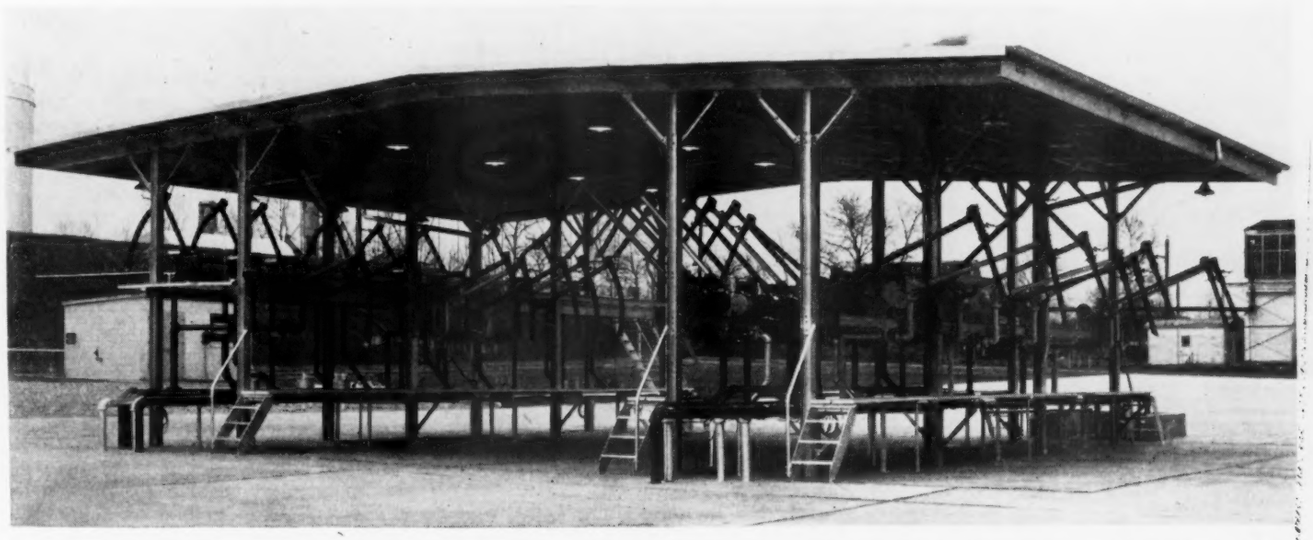
These settling devices are made with baffle plates and 80-mesh monel metal screens. The tanks are placed between the storage yard and the regular meter strainers, so that all products metered are thoroughly strained at two points.

Before entering the meters, but after leaving the trap tanks, the products pass through the regular air eliminator connected in each line, to further assure accurate measurement at all times.

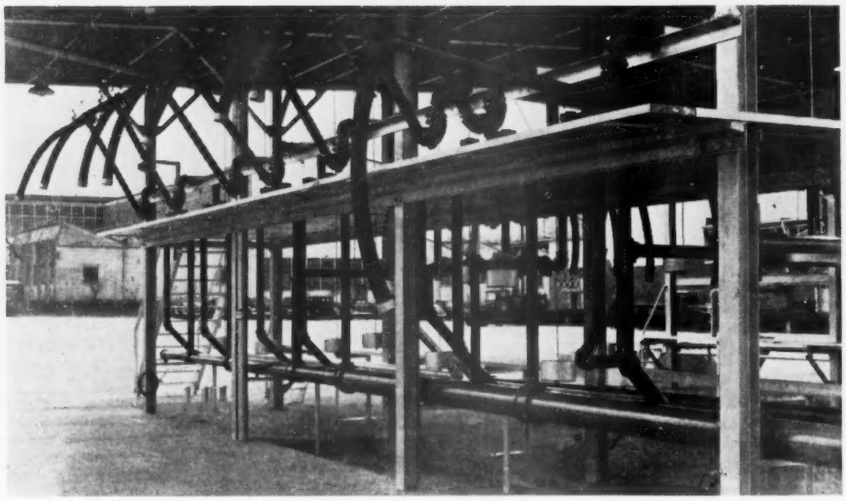
In further speeding movement of vehicle equipment to and from the rack, fuel and water requirements of this equipment are supplied at a separate location in the yard, where the service will not interfere with loading at the rack.

LOSS from turbulence during the comparatively high-speed discharge of volatile products is kept to a minimum by submerged loading of truck tanks. The company is trying out two different types of loading arms and extensions. On racks 1 and 2, the arms are counterbalanced—to swing them up out of the way when not in use, by weights suspended from overhead pulleys. These weights consist of 12-inch couplings filled with concrete. They weigh about 100 pounds and there is one to each loading arm. The load arm extensions are 3-inch flexible hose, on these two sections of the rack.

Counterbalancing of arms on platforms 3 and 4 is achieved by means



This four-lane loading rack at Sohio's new bulk plant at Cincinnati, will accommodate an entire transport assembly at No. 1 platform on the far left and two distributing trucks at each of the other three platforms. Located in the center of a large concrete-paved yard, this rack provides flexible truck movement in and out of the loading position



Transport side on the "double-double" loading rack. It features a metered discharge capacity of 500 g.p.m. through 3-inch flexible extension to load arms. The arms are counterbalanced by overhead suspension of weights, shown hanging under the platform

of a metal weight extension of the loading arm, at the rear of the swing-joint pivot. Lubricated double swing joints are used to give any number of positions to the arm within a radius of nearly 180 degrees. Metal extensions to the arms reach to within a few inches of the tank bottom and are attached to the arms through swivel ball joints.

Every drop of two grades of gasoline and of kerosine handled on this rack is metered. There are two 6-inch meters on lines supplying the regular grade gasoline, one 6-inch unit for the premium grade and one 4-inch meter for kerosine.

DURING the day, when a large number of tank units are being loaded at the same time, total throughput of gasoline at the rack is shown by the combined gallonage on individual load tickets and each day this total is checked against gallonage shown on the master meters.

Where drivers of the 6200-gallon truck and trailer transports do their own loading at night, individual load tickets show meter readings before and after the loading operation. The next driver to load shows the closing meter reading for the preceding truck on his report, providing an accurate check.

It should be pointed out that all distributing equipment operated out of this plant is loaded to markers in the compartment domes, with the master meters serving as a cross check on total volume of gasoline loaded for any given period.

Accurate checking of truck compartment capacities for setting the markers is accomplished by metered filling of the compartments with water and bucket measurement as the contents are drained. The capacity indicated by these two measurements must check within a very narrow tolerance.

A separate office building—division headquarters—occupies the front section of the property, with the offices all on one floor and occupying an area 42 by 116 feet. Outside walls are porcelain enamel in the company's familiar red, white and blue color scheme. The building is air-conditioned for summer and winter weather.

In designing the warehousing facilities, particular attention was given to the elimination of extra handling of package and barrel goods from one floor to another and to a reduction in waste space occupied by roof supports and partitions. Located 60 feet in back of the main office building, the one-floor building—except for a mezzanine—is 120 by 292 feet, affording an area of 35,040 feet. The bulk station office, also air-conditioned, is located at one end of this building.

TIRE storage is provided on a mezzanine floor, 60 by 60 feet, giving an effective space of 35,840 feet for warehouse purposes, after deducting office space. Merchandise is raised to this mezzanine floor by an electric hoist and brought down, as required, via a wide chute.

This building is of brick and steel construction, with monitor-type roof which gives maximum light and ventilation. On the side of the warehouse next to the yard is a platform 10 feet wide and 272 feet long for convenience in handling package goods in and out of the warehouse. This facilitates prompt loading and unloading of trucks without blocking doorways.

At one end of the building there is another platform 20 feet wide and 120 feet long, on which is handled the filling of inflammable liquids, including gasoline, naphthas, solvents and other special products into drums and cans. Empty drums are stored in a weather-protected space under this platform. This space is also 20 by 120 feet and has a 9-foot ceiling. It is equipped with a barrel chute at one end and a hoist at the other end.

Bulk storage is provided in a brick-enclosed area at one end of the warehouse for 16 grades of industrial and motor oils, with 12 tanks 10 feet 6 inches by 20 feet holding 12,900 gallons and 4 tanks 9 feet by 14 feet holding 6700 gallons—a total storage of 182,168 gallons.

Outdoor pipelines to these tanks from the pumphouse are 3 feet underground in a concrete pipe duct 4 feet wide and 18 inches deep and are protected from loss in product fluidity during cold weather by two 2-inch steam lines running the full length of this duct.

Handling of drums and time required for the filling operation in this industrial and motor oil department, is also kept to a minimum. Barrel fillers are used which automatically shut off when the drum is full and the actual gallonage in each container is determined from net weight and gravity of the product.

AN AUTOMATIC barrel weighing scale, recessed level with the floor, is located in the barrel filling room close to the bulk storage tanks. This scale indicates instantly, without any further calculation, the weight and gallons for all grades of products handled, according to their gravity.

To provide for bulk delivery of industrial oils received in drums, there is a metal rack of 30 drums capacity extending along one wall in this room. These drums are equipped with the usual "molasses gate valves". An electric barrel hoist and overhead track serves the rack for lifting out empties and for replacing full containers. The barrel filling room occupies an area of 2400 square feet.

Fire protection for the plant is provided by a complete foam system directly connected to the city's high pressure water line. In addition, the company has installed an 8-inch line from the street to the rear of the property, to supply high pressure water to a number of hose connections surrounding the entire plant. These hose connections are strategically located, so the plant can be blanketed with a spray of water.

A running story

Here are two running schedules

1—The refiner WITH Dubbscracking runs his plant for all it's worth and despite its high yield he still can't make enough Dubbscracked gasoline to satisfy his trade That's why so many of them are increasing their Dubbscracking capacity

2—The refiner WITHOUT Dubbscracking often has to run his legs off to sell his gasoline—sometimes he can't sell it That's why so many of them are putting in Dubbscracking today

What is your running schedule—and what are your results?

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

Little Change in Octane Ratings In the Middle West in 1939

UNLIKE the situation on the eastern seaboard, the knock rating of most regular grade gasolines sold in the middle west did not increase greatly in 1939.

Tests on seven samples of regular gasoline collected in February, 1939, at Chicago stations showed an octane number of 71.5 by the A.S.T.M. Motor Method. In December tests of the same seven brands sold in Chicago showed an octane number of 72.5

This increase of only one octane number in Chicago compares with a rise of 3.4 octane numbers at Philadelphia, a rise of 2.6 octane numbers in Middle Atlantic states and of 2.1 numbers in Cleveland in the same period. (NPN, Jan. 31, p. 25)

Samples of nine regular gasolines collected in St. Louis in February and again in December, 1939, showed a drop of 0.9 octane number. The February, 1939 average was 72.5 by the A.S.T.M. Motor Method (73.0 by the L-3 method). The December average was 71.6 octane by the Motor Method (72.8 by the L-3 Method).

The increase in average knock rating of Chicago gasolines caused by three major marketers, as will be seen in the detailed figures given in Table 1. Two marketers increased the A.S.T.M. octane rating of their regular gasolines 1.7 numbers, another increased 1.1 numbers.

In St. Louis one major marketer reduced the knock rating of his regular gasoline 2.1 numbers in the period under survey. One marketer increased the rating of his gasoline 1.5 numbers and another 1 octane number.

Supplementing report by NATIONAL PETROLEUM NEWS on current gasoline quality on the Atlantic seaboard in its Jan. 31st issue, Table 2 reports the knock rating on five regular price gasolines sold there in Boston in January, 1940, compared with the same gasolines sold there in January, 1939. The tabulation indicates that Boston gasolines were somewhat higher in knock rating a year ago than the Middle Atlantic states or Ohio. Today the Boston level is still higher than Ohio but somewhat below the level in Philadelphia and the Middle Atlantic states.

A SEPARATE check of the knock rating of three premium gasolines sold in Boston in January showed an average A.S.T.M. octane rating of 78.8, five numbers higher than the average of regular grade gasolines as shown in Table 2. One regular gasoline sold in Boston had an octane number of 77, while one premium gasoline sold there tested 76.5 octane.

Distillation characteristics of the seven regular gasolines sold in Boston are shown in Table 3. As in other eastern areas, the volatility of regular gasoline is higher now than a year ago. Initial boiling point is down 5 degrees and the 10 per cent recovered point is down 1 degree. Vapor pressure is up 0.7 pound, with two gasolines showing a vapor pressure of 13.1 pounds.

TABLE 1

Octane Number of Regular Gasolines Sold in Chicago and St. Louis, February, June and December, 1939

Brand	Feb., 1939 A.S.T.M. M.M.	Feb., 1939 L-3	June, 1939 A.S.T.M. M.M.	June, 1939 L-3	Dec., 1939 A.S.T.M. M.M.	Dec., 1939 L-3
Chicago						
Major Marketers						
A	71.7	72.6	71.1	72.6	71.7	72.9
B	71.3	71.8	72.0	73.3	72.4	72.4
C	71.4	73.3	70.5	71.9	71.5	73.9
D	72.0	72.7	72.0	73.5	72.5	73.7
E	71.9	73.0	72.1	73.4	74.6	76.1
F	70.8	72.4	70.2	72.4	72.5	74.1
Av.	71.5	72.6	71.3	72.9	72.5	73.9
Minor Marketers						
G	71.2	73.0	70.6	71.6	72.1	73.1
H	71.4	72.0	71.1	72.0	....	....
I	70.6	71.9	71.0	71.9	....	....
J	71.5	72.3	70.5	71.6	....	....
K	71.9	73.9	72.4	73.1	....	....
Av.	71.3	72.6	71.1	72.0	72.1	73.1
St. Louis						
Major Marketers						
A	72.2	72.7	71.5	72.8	71.2	73.4
B	73.3	72.8	72.6	73.5	71.8	72.5
C	72.2	72.7	71.3	72.8	71.8	73.0
D	72.8	73.7	72.0	73.0	72.5	72.8
E	72.5	73.0	71.4	72.5	70.4	71.1
F	72.8	73.6	71.6	72.1	72.5	72.8
Av.	72.6	73.1	71.7	72.8	71.7	72.6
Minor Marketers						
G	73.2	74.4	71.2	72.1	70.8	72.8
H	71.7	72.0	71.4	72.4	....	....
I	72.1	72.5	70.8	72.8	71.5	74.0
Av.	72.3	72.9	71.1	72.4	71.1	73.4

TABLE 2

Octane Number of 7 Regular Price Gasolines Sold in Boston, January, 1939 and 1940

	A.S.T.M. Motor Method January 1939	1940
A	73.5	77.0
B	71.5	72.5
C	71.0	70.5
D	....	73.0
E	....	....
F	72.5	76
G	....	....
Av.	72.1	73.8

TABLE 3

Distillation Characteristics of 7 Regular Price Gasolines Sold in Boston, January 1939 and 1940

Brand	Gravity °A.P.I. January 1939	1940	I.B.P. °F. January 1939	1940	10% Rec. January 1939	1940	50% Rec. January 1939	1940	90% Rec. January 1939	1940	E.P. °F. January 1939	1940	Reid Vapor Pressure Lbs. @ 100 °F. January 1939	1940
A	62.5	62.4	90	83	130	131	230	228	344	345	414	408	12.0	13.1
B	59.8	60.0	94	88	140	142	245	238	351	351	423	423	11.0	10.1
C	61.2	61.5	88	88	127	130	236	232	352	348	401	404	11.2	10.8
D	....	61.9	91	83	133	125	250	236	356	356	412	413	11.3	13.1
E	....	60.9	94	91	132	138	234	244	335	347	390	396	10.3	10.2
F	61.7	63.2	90	86	132	130	248	245	344	344	384	387	10.4	11.8
G	60.2	62.7	90	86	132	125	246	232	356	347	406	394	11.2	12.8
Av.	61.0	62.0	91	86	132	131	241	236	348	348	404	403	11.0	11.7

GREATEST FRIENDMAKER

A DEALER EVER HAD

SHELL'S SHARE-THE-ROAD CLUB is the Shell dealer's greatest guarantee of steady gallonage.

• • •

Millions of cars carry the emblem of the Share-the-Road Club . . .

Each car stopped at a Shell station to get this emblem . . .

The car owner left his name and address with the dealer when he joined the Share-the-Road Club . . .

And almost every time, he bought either gasoline or motor oil or both.

• • •

BUT MORE IMPORTANT — dealer and car owner met under the best possible circumstances . . . **DRAWN TOGETHER** by their common interest in fighting a nation-wide nuisance . . . ***Stop-and-Go driving.***

The Shell dealer offers the motorist two distinctive and exclusive weapons against Stop-and-Go . . . *the Share-the-Road Crusade* to cut the AMOUNT of Stop-and-Go . . . SUPER-SHELL to cut the COST.

Such strong selling advantages are rare indeed in the oil industry.

• • •

This is only one of a series of strategic moves which bring Shell dealers and their customers together on a basis of mutual interest . . .

THE SHARE-THE-ROAD CRUSADE is more than printed advertising . . . it is a Dealer-Participating, Customer-Participating Plan which is making the SHELL FRANCHISE more than ever an asset to be sought after and retained.

For further information concerning the details of what Shell has to offer, we suggest that you talk to a Shell representative today.

SHELL OIL COMPANY
INCORPORATED

Teaser ads prepared the public for the announcement an oil marketer's well known brand of premium motor fuel, Bearcat was to be Ethylized

The Bearcat Takes A Wife

Veteran Oil Marketer Uses Ingenious Method To Keep His Gasoline Brand Insignia Before The Public

Most motorists who have toured through Colorado in recent years have become familiar with the Bearcat, the trade insignia of the premium motor fuel of the Powerine Co., one of the oldest and best known independent marketers in that section of the country.

And a great many oil men who had never been in a Rocky Mountain state still knew the bounding, playful Bearcat; for Fred C. Cramer, who started the Powerine Co. and originated the character as the trade mark of his motor fuel, was on hand at many marketer conventions to talk about Bearcat, as he clinked silver dollars in his pocket. Mr. Cramer, in earlier years at least, didn't like the paper money we used back in the east, so he came to conventions with his pockets filled with silver, literally, so he would feel more at home. That's aside from the story, however.

To get back to the Bearcat, well might Mr. Cramer and his company feel proud of this trade insignia. For a rugged, but good-natured beast it was, as it stalked over the landscape in signs and through the newspapers in the advertisements of his gasoline, typical of the country and expressive to people there of quick starting and power in motor fuel. So the Bearcat endured through the years, a leer in its eyes and a wide grin that belied its natural ferocious character.

Anti-knock ratings on motor fuels have been going up in the past several years and recently came the time when the Powerine Co. wanted to further improve its Bearcat gasoline with Ethyl fluid, but it still wanted the Bearcat to be a dominating trademark. So the Bearcat put on a frock coat and top hat and was formally married to Ethyl Anti-Knock. Small, one-column by three-inch teaser ads were scattered through the newspapers for three days preceding the formal announcement. The newspaper advertising copy the day the new fuel was introduced, showed the Bearcat and Ethyl at the altar, the minister a Powerine pump. Powerine service station salesmen wore silk hats and gave each patron a slice of wedding cake in a cellophane envelope, together with a circular telling about the marriage.

Sixty cars, decorated with crepe paper streamers, tin cans tied on behind and a "Just Married" placards, toured the city, horns blowing, to charivari the bridal couple. Many dealers were sold out of Bearcat-Ethyl motor fuel before noon the opening day, the company reported, despite the fact its price was higher than other advertised Ethyl gasolines.

JUST MARRIED!
DO YOU TAKE THIS WOMAN FOR BETTER?
I DO
AUTOMOBILE BLUE BOOK
Ethyl Gasoline Corporation announces the marriage of their daughter Ethyl Anti-Knock to Powerine's Bearcat on Friday, January 26th at all Powerine Service Stations
Powerine
WHAT AN IDEAL COUPLE!
MOTORISTS
POWERINE PUMP
ETHYL

Powerine's BEARCAT and ETHYL Join to Give You a Sensational, *New* Motor Fuel

Even the Farm Tractor Is Going High Compression, Kansas Marketers Told

By N.P.N. Staff Writer

WICHITA, Kans., Feb. 17.—The cause of valve trouble with the older type of farm tractors, where gasoline is used as fuel, was discussed by H. L. Nixon of Kansas City, Ethyl Gasoline Corp., before the annual meeting here this week of the Kansas Oil Men's Ass'n. With the increased use of gasoline as a tractor fuel in Kansas the past year, cases of valve complaint have increased, he said.

With many tractor engines of the type made 10 to 15 years ago, where the heavier fuels were to be used, no attempt was made to provide a lubricating system for the valves, Mr. Nixon stated. This was not a poor design in its time, he said, since such a fuel will generally provide its own lubrication from the unburned residue remaining on the valve stems.

"Gasoline used as a fuel in such an engine burns more completely, leaving the stems dry, and deprives the valve stems of their lubrication", he said. "In many instances the gasoline supplier was at a loss to explain this trouble and not infrequently the gasoline was credited as the cause.

"Engines of a common design were especially vulnerable in this respect and this fact serves to clinch our contention that the gasoline is not at fault. The same gasoline used in more conventional engines gives entirely satisfactory service. It is significant to note that changes have now been effected particularly in providing a different valve material, the use of which will eliminate this difficulty."

These older types of tractors, Mr. Nixon said, were designed for the heavier fuels in general use then because of their low cost. With these heavy fuels, heat in the motor block and manifold distributing system was necessary and desired, and the tractor engine designers did not make serious attempts to reduce either the size or weight of their engines.

With the older type tractors, he stated that, if the manufacturer's recommendations were followed carefully, gasoline can be used as fuel to marked advantage. "When such a fuel is used, however, primary attention must be given to the thorough and rapid dissipation of the waste heat," he stated. "In some instances this should be carried even further than is permitted by the adjustments which the manufacturer provides.

"The installation of proper spark plugs—suited to the fuel as well as the motor—will materially assist in this connection. The tractors referred to are generally provided with a "hot" type spark plug, suitable for use with low grade fuels. When gasoline is used, "cold" type plugs designed to dissipate heat more rapidly should be used. The interpretation of these facts to your farmer customers may properly form part of the service which you render them.

"The use of gasoline with its higher inherent anti-knock value permits the tractor user to further utilize the high compression principle. The application of high compression in the older model tractors results in marked increases in power and economy. If your tractor customers are not already using gasoline, therefore, you might recommend the adaptation of high compression as a means of securing more tractor power and more tractor fuel economy. It can be accomplished in most of the older tractors at very little expense. I would also urge that you suggest the installation of the newest type valves in these tractors whenever any valve work is being done on them, particularly if they are using gasoline as fuel."

The newer type tractors built in the past few years by several manufacturers, Mr. Nixon said, are built more along automotive lines and provide either increased power with the same approximate weight or decreased weight with the same approximate power as predecessor models. The reduced size—in proportion to power—makes for reduced waste heat, he stated, and in addition these newer models utilize other devices to secure this same desirable characteristic.

Like the automobile and truck designers, the tractor manufacturers are now building their engines to "crowd" the anti-knock value of the fuel being used, Mr. Nixon stated. "No refiner, to the best of my knowledge," he said "has been able to produce a so-called heavy fuel with an appreciably high anti-knock value. Tractor distillates, even those which are 100% cracked stock, will seldom exceed 38 to 40 octane number. The advantages of gasoline as a tractor fuel are several and probably the greatest of these is in its higher anti-knock value. This is certainly a factor in marking the swing from the heavier fuels for this type of equipment."

Mr. Nixon said there were approximately 100,000 farm tractors in Kansas, in the ratio of four tractors to each seven farms. However, he said, between 85 to 90% of the tractors in Kansas fields are of the older type designed from 10 to 15 years ago.

In discussing the improvements in anti-knock qualities of motor fuels in recent years, he stated that the aver-

TO ENGINE VARNISH

The industry faces a serious problem in engine varnish—that tacky substance which commits sabotage in modern motors. By clinging to the pistons, valves and cylinder walls, it causes serious trouble.

Conewango engineers have licked engine varnish with a new refining process called Selective Adsorption. This process, used *exclusively* for Conewango Process Motor Oil, removes varnish forming ingredients and improves lubricating qualities.

The pistons shown above were run at Pennsylvania State College under identical conditions; the first with a high grade, conventionally refined Pennsylvania oil, the second with Conewango Process Oil of the same S.A.E. grade. Note how Selective Adsorption virtually eliminates varnish formation!

This revolutionary development offers unusual profits to alert dealers and jobbers. Write now for complete information.

Conewango Process
VARNISH FREE
MOTOR OIL

Fine Pennsylvania Oil
MADE FROM THE HEART OF THE CRUDE
Copyright 1939

THE CONEWANGO REFINING CO.
WARREN, PENNA.

age octane number of regular grade gasoline sold in the U. S. in January, 1940, reached a new high of 73.8. This compares with 69.6 average octane number of regular grade in the summer of 1936, the octane number in both cases being by the L-3 method. In general, he said, the gasolines along either coast are somewhat higher than those secured in the middle west.

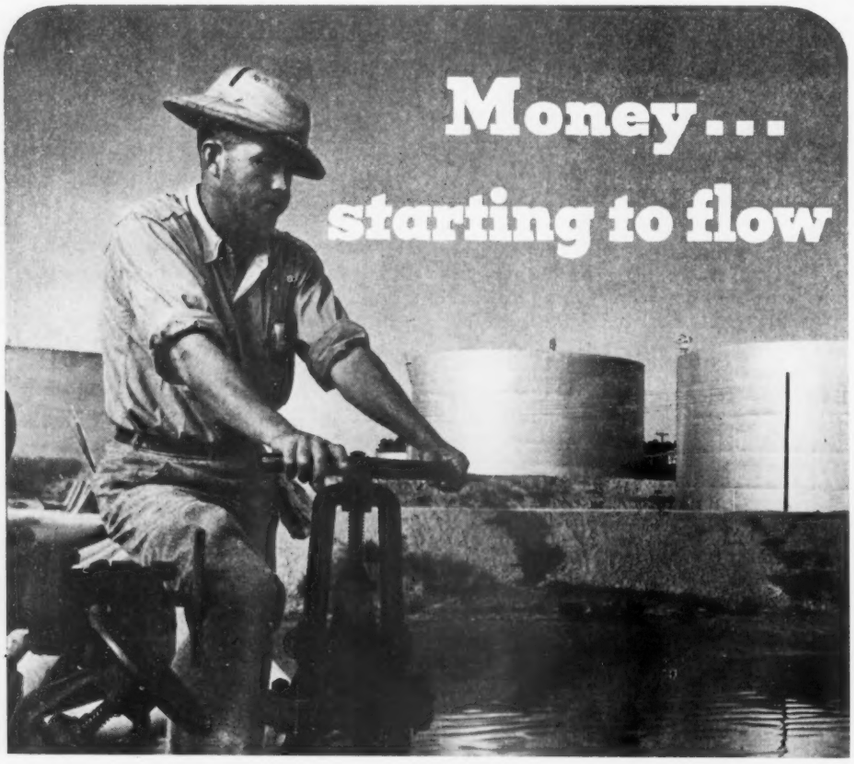
Referring to the new method of testing for anti-knock known as the 1939 Modified Research Method, he stated this method tends to appreciate the octane number of most gasolines so that a higher octane number results. "The actual anti-knock value of the fuel may not have changed or may have changed only very slightly", he said.

As showing the advantages of the anti-knock motor fuels, the speaker described a research program conducted by one automobile manufacturer. "A valve-in-head engine was used in both the laboratory and under road conditions", he said. "A number of compression ratios and gear ratios were used with fuels which were just above the knocking state. A fuel of about 69 octane value gave suitable performance with the compression ratio conventionally built in that engine. The ratio was increased to 8 to 1, which required an approximately 95 octane number fuel and again to over 10 to 1 ratio, requiring a fuel of better than 100 octane number.

"The respective changes at a given speed resulted in an improvement in miles-per-gallon from 12½ to 18 and 21. A matter of significance and justifying an additional cost of 12 cents between the low and high brackets based on today's retail price of 19 cents."

With the gradual improvement in anti-knock quality which, from the present trend, may be expected, Mr. Nixon said there would be a wider range in this quality between the three accepted grades of gasoline, which will make for a more pronounced selection of fuel for a given motor.

Robert Yarnall Richie



The valve turns—it may be your commodity starting to flow from tanker to General American tank. And we never forget that liquid represents Money to you. So we watch it every step—guard against contamination—send it to modern protective tanks. We put our facilities at your command for speedy shipment at any hour. General American saves your commodity — and saves you money. All without a penny's investment on your part. Join the world leaders who profit from General American Terminal Service.

Strategically located to serve you!

GATX GENERAL AMERICAN

GENERAL AMERICAN
TANK STORAGE TERMINALS

Goodhope, La. and Westwego, La., (Port of New Orleans)
Corpus Christi, Texas
Carteret, N. J. (Port of New York) Galena Park, Texas (Port of Houston)

A DIVISION OF GENERAL AMERICAN TRANSPORTATION CORPORATION

How To Make A Motorist Buy A Lubrication Job!

When an oil marketer runs a paid advertisement in his local newspaper, telling motorists how to grease their own cars, when he has a lubritorium with a lift, pressure guns, other modern equipment and men trained to do this work — that's "man-bites-a-dog" news.

Warren Guernsey, Guernsey's Super Service, of Velva, N. Dak., ran just such an ad and he says he got a lot of business as a result. The ad. was in a black box with the heading in boldface type, "How To Grease Your Own Car". Shrewdly worded, its effect was to make the job about the most unpleasant task that could be undertaken. Here is the text of Guernsey's ad:

"FIRST—Put on your dirtiest clothes so you can crawl under your car.

"SECOND—Buy a supply of transmission, universal joint, water pump, and pressure gun greases, a grease gun and a spray gun. Also some penetrating oil and No. 40 oil.

"THIRD—Equip yourself with lots of good strong words such as "Darn," "Oh, hang," and such to use on the joints where the grease doesn't want to come through. Keep using these words until the grease comes out the other side.

"FOURTH—Buy yourself a complete set of wrenches to use on the containers that must be opened to inspect the lubricating supply inside. Also some new skin to graft on your knuckles when the wrench slips.

"FIFTH—Fill your spray gun full of penetrating oil to spray on the springs. Be sure not to breathe for about 10 minutes while spraying the springs or you may oil plate the insides of your lungs, which is bad.

"SIXTH—Be sure not to miss any place that should be lubricated as it may cost you the price of 20 grease jobs for repairs.

"Or, if this seems too much trouble and expense, drive your car into GUERNSEY'S SUPER SERVICE STATION and ask for a COMPLETE PURE OIL BUMPER TO BUMPER LUBRICATION. We assure you it's the latest thing in complete greasing service."

Evils Cited In 'Gas' Tax Refund Practices

Excessive administration costs, likelihood of evasion and the fact that refunds would not go to the farmers who most needed them, are cited as objections to a proposal to refund the Kentucky gasoline tax where the product is used in farm tractors or stationary engines. The proposal is before the Kentucky assembly.

Orba F. Traylor, research director of Kentucky's legislative council, recently completed a report for the assembly based on the experience of other states with refunds. He also states the loss of revenue for highway building purposes is an important factor where refunds are made.

In discussing the types of deductions that must be considered, the report says the amount of refunds made for legitimate farm operations is only the first item. The other two items are:

1. Cost of paying the refund, which is estimated to be approximately twice the cost of administrating the gasoline tax, and would be about 20 percent of the amount refunded.
2. Fraudulent evasions, which it is said would lead to a 8.18 percent cut in the state's gross revenue, and would mean a million dollar loss to the highway fund.

In that $130,000,000 is reported to be the amount needed for highway construction, in order to reach safe traffic standards for 1940, "it will be suicidal to reduce any available funds now or hereafter," stated Mr. Traylor.

Since the greater amount of the money for new construction is matched by federal funds, federal aid will be lost by refunds such as are proposed, he stated.

The greater percentage of Kentucky's farmers would not benefit greatly, in that only 4.6 percent of the farmers own tractors, and a smaller percentage stationary engines, he brought out.

A gasoline tax refund would result in reducing highway activity, and the legitimate benefits would go to less than five percent of the farm population, "which on the whole is most prosperous". Moreover, benefits to farmers have been and are greater than the relative tax loads borne by the rural population, it was stated.

"It must be remembered that the distribution of legitimate benefits would actually amount to much less than the total million dollars because a substantial part would go to illegitimate claimants", said the report.

States mentioned in which gasoline tax refund frauds had taken place were Colorado, Mississippi, Missouri, and New York.

In one state it was found, the report states, that bona fide tractors which had been incapable of operation for years were found as the only non-highway farm engine in numerous taxpayers' possession, the report brought out.

Calendar of Events Is Aid To Tourists

A calendar of festivals and events of national significance, which attract motor tourists from distances, has been published for the first six months of 1040, by the U. S. Travel Bureau of the Interior Department, at Washington.

Copies of this 36-page pamphlet, which lists the date, event, and the place, may be had by writing the Travel Bureau. Prepared especially to help tourists plan their trips, the pamphlet includes folk festivals, entertainments at "watering places", musical and sports events, famous plays, centennials, expositions, and fairs.

Auto Show Dates Set

When top hats and evening dresses leave fashionable New York homes this year, to "discover" new model cars on the opening of the 1940 National Automobile Show, it will be on a famous day, Oct. 12, the date of the discovering of America. The show will last until the 19th. It will be held again at Grand Central Palace.

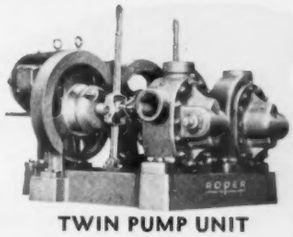
Action

Smooth, unfailing action day in and day out . . . action that transfers oil in less time and at lower cost.

When you equip your bulk plant and trucks with Roper Pumps you'll be impressed with their quiet operation and you'll be more than pleased with the savings in power consumption.

Go along with the leader . . . it always pays. Full descriptions and prices will be sent promptly upon request.

Write for Bulletin N-278

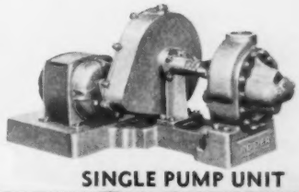


TWIN PUMP UNIT

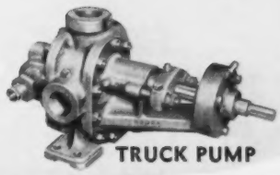
ROPER

Rotary PUMPS

DEPENDABLE SINCE 1857



SINGLE PUMP UNIT



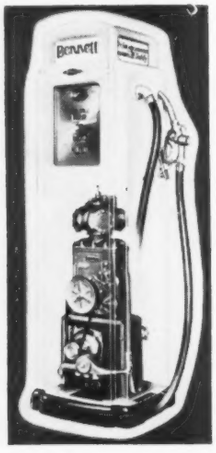
TRUCK PUMP

GEO. D. ROPER CORP., ROCKFORD, ILLINOIS.

New Equipment

AND THE MANUFACTURERS

NEW GASOLINE PUMP — Pyramid construction is featured in a new gasoline pump by Service Station Equipment Co., Muskegon, Mich. Meter, air eliminator and pumping units have been redesigned and combined into one assembly—all mounted on the



base and entirely independent of the pump's framework. The complete assembly is floated on live rubber to insure quietness.

All parts are accessible and removable through the open doors, front and rear, which are spring-lock, full-length and removable. It is stated only an 8-inch adjustable wrench and screw driver are necessary for all ordinary service requirements.

★ ★ ★

BULK PLANT, TRUCK METER—Pittsburgh Equitable Meter Co. announces its Rotocycle meter is available in types and sizes for bulk plant and tank truck services. Designated as a "packaged metering unit" by the manufacturer, the tank truck unit includes in compact dimensions, a meter, air eliminator and strainer, with optional positions for inlet and outlet connections offered, together with a wide variety of registers for use on the meter. Bulletin on request.

★ ★ ★

ROTARY HOSE COUPLING—A new built-in rotary hose coupling for oil well drilling operations, announced by the Mechanical Goods Division, United States Rubber Co., incorporates a unique construction principle which causes the connection to become tighter as pressure is applied.

★ ★ ★

FIELD ENGINEER RESIGNS — Walter W. Brown of Berkeley, Cal., field engineer of the Ralph N. Brodie Co., meter manufacturers, has resigned. He has been associated with this company since 1927, spending six years in establishing agencies and training salesmen, then being transferred to New York and returning to the factory in 1938. His future activities, while not definitely announced, will engage him in the equipment business, he states.

Walter W. Brown

★ ★ ★

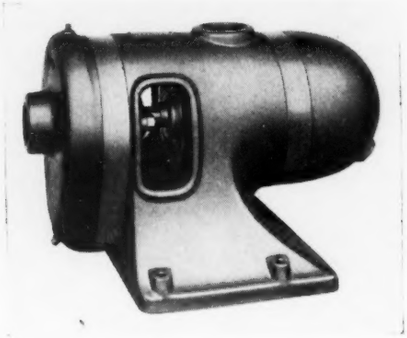
NEW DISTRICT MANAGER—American Meter Co. announces the appointment of Calvin N. Payne as manager of its Kansas City branch, succeeding the late Eugene Metz. His territory will include Missouri, Kansas, Nebraska, Colorado and in adjacent areas in Utah, Wyoming and Montana. After attending Princeton University, Mr. Payne joined the American Meter Co. 18 years ago and was placed in charge of its Denver office in 1930.

Calvin N. Payne

★ ★ ★

NEW MOTOR AND PUMP UNIT—A fully enclosed, electric motor and centrifugal pump combination in a single compact frame, has been announced by Smith Meter Co., Los Angeles.

It is claimed this unit provides in one compact unit the smallest size-to-power and the highest power-to-weight



ratio of any motor operating on a standard cycle, three-phase current. It is said the pump frame is so constructed that water or other liquid handled cools the motor.

The Smithway Centrifugal pump, powered with a one-half to ten horsepower motor, is said to handle from 20 to 200 gallons per minute, operates on temperatures to 200 degrees Fahr. or more, and heads up to 250 feet.

PENNSYLVANIA MOTOR OILS

IN CANS — DRUMS — TANK CARS

Write for **PRICES**

Buyers cans received—stored—filled and shipped as wanted.

INDUSTRIAL OIL CORPORATION

WARREN, PENNA.

ESTABLISHED 1924

Extension of the Pittsburgh-Harrisburg Superhighway Proposed to Road Builders

N. P. N. News Bureau

WASHINGTON, Feb. 19.—Only on comparatively short stretch of "superhighway", now under construction, is the sole tangible result of years of discussion of such roads, in and out of Congress and the state legislatures. A second definite project is still in the "talk" stage.

The stretch under construction is 160 miles being built between Harrisburg and Pittsburgh by the Pennsylvania Turnpike Commission, an official body of the state, with funds loaned by the federal government. It will be paid for out of motorist tolls.

The second project, from Richmond to Boston, passing through or near Washington, Baltimore, Philadelphia, New York and New Haven, is the proposal of Donald Sterner, head of New Jersey's highway department. It was discussed by representatives of the states concerned at a meeting in New York recently. A committee of officials of these states was named to further the project.

This second stretch received an official "ok" from the Public Roads Administration in its special report on superhighways to Congress last year, as the most "feasible" route over which a highway might be expected to pay for itself through tolls. The Administration (then the Bureau of Public Roads) made its report in response to a request to study several proposals then before Congress contemplating spreading networks of transcontinental highways.

However, the projected highway lacks funds, a definite route, and several other requirements necessary before construction can be begun.

This Richmond-Boston stretch is also included in a plan sponsored by the Pennsylvania Turnpike Commission. This plan was described by the Commission's chairman, Walter A. Jones of Pittsburgh at the American Road Builders' convention in Chicago last month. Mr. Jones is an oil man, an executive of the Plymouth Oil Co.

His proposal is to continue the Pennsylvania road west from Pittsburgh to St. Louis, running near Columbus, Dayton and Indianapolis. A "branch route" would take off from this proposed superhighway west of Pittsburgh, running northwest to Chicago, near Cleveland, and Toledo, and a third branch would run from Indianapolis to Chicago.

This plan, however, does not have the blessing of the Public Roads Administration, although in describing it to the road builders, Mr. Jones declared that it should be sponsored by the federal government, and paid for out of "fares" of motorists who utilize it.

Construction of this system of roads would cost in the neighborhood of $1,000,000,000, it is estimated, divided as follows:

Richmond to Boston	310,000,000
Harrisburg to Philadelphia	50,000,000
Pittsburgh to St. Louis	250,000,000
Ohio River to Chicago	188,000,000
Indianapolis to Chicago	62,000,000

The cost of the Harrisburg-Pittsburgh stretch, now under construction and due to be opened to traffic this year, is not included in the above tabulation.

Such a plan of superhighways, with divided lanes, banked curves, no red lights, no cross roads, no frontage or entry permitted except at designated points, would undoubtedly fit in with the federal government's plan of "military" roads, strategically located, for national defense. However, both the War Department and the Public Roads Administration say that "military" roads should naturally follow the traffic stream of roads used in civil business and industry.

The Public Roads Administration has published a map showing the proposed "interregional" highways which are desirable to the War Department for national defense. However, it is explained that improvement of these roads—and no mention is made of making them come up to "superhighway" status—will take its turn along with programs submitted by the states covering these as well as other roads useful to civilian motorists and truck shippers.

In his address to the Road Builders, Mr. Jones did not mention any specific rate of "fare" for travelers using the superhighways. He said the "fares would be moderate enough to attract a large volume of traffic, and that country thus would obtain the immediate benefit of the improved facilities without burdening the states, decreasing present state highway expenditures, or decreasing the present amount of federal aid. "The increase in the consumption of gasoline from the additional traffic induced by the new facilities will prove to be of material aid to the several states by swelling motor vehicle revenues derived from the gasoline tax," he said.

From this, it would appear that the motorist will be asked to continue his present contribution to road funds, through payment of the gasoline tax, as well as to pay a toll on those "superhighways" when he chooses to use them.

As to the location of service stations on the right-of-way along these superhighways, the Pennsylvania Turnpike Commission said it had not given any thought to the location of stations on the Pittsburgh-Harrisburg highway. Mr. Jones, in his address to the road builders, said "frontage" would be limited, except at certain points.

Naturally!

MacMillan-Cameron Selected Davidson Porcelain Enamel

Davidson facilities offer a latitude which enables the architect to design freely in a wide range of sizes, shapes and colors, while Davidson equipment permits the manufacture of quality porcelain enamel building parts that cannot be produced satisfactorily or promptly by ordinary methods.

Davidson offers the services of a trained, experienced architectural and engineering staff to assist in obtaining unusual effects and exclusive designs at minimum cost.

Write today for a copy of the Davidson book on porcelain enamel. It is free and entails no obligation.

DAVIDSON PORCELAIN ENAMEL

DAVIDSON ENAMEL PRODUCTS, INC.
490 EAST KIBBY ST. • LIMA, OHIO

Markets

Mid-Continent

TULSA, Feb. 17.—An improvement in demand for most petroleum products was reported in the Mid-Continent the past week. Most of the activity was said to be against contracts.

Many refiners said they were not pushing gasoline into the open market because they felt prices were on bottom and higher prices could be obtained in the near future. No changes in quotations were reported.

Increased activity in lubes centered on export inquiry, refiners said. Wax was in good demand from both export and domestic buyers, it was said.

Continued good demand for kerosine, range oil and fuel oils has precluded the building up of stocks, some refiners said.

A 5-car sale of Grade 26-70 natural gasoline was reported at 1.75c, f.o.b. Breckenridge, the first sale reported on this basis in some time. Sales at 2c were reported on an f.o.b. Group 3 basis.

Pennsylvania

CLEVELAND, Feb. 17. — Bright stock, 25 pour test, and dark cylinder stocks were offered 1 to 2c a gal. lower in a week of quiet trading in western Pennsylvania. Prices for other products generally were reported unchanged.

One refiner reported offering up to 15 cars of 25 p.t. bright stock at 25c a gal., 2c under quotations reported by five other refiners. He said demand was exceptionally slow. Some refiners said there were indications that there would be an early revival of export buying which they believed would stem the downward price trend. At 25c, bright stock was off 7c a gal. from the high reached late last year.

A lower field refiner reported offering ordinary U. S. Motor gasoline at 4.50c. No other lower field quotations were reported and five other refiners said they were not finishing off the naphtha or were using it as a base for "Q".

Gulf

NEW YORK, Feb. 17.—No changes in quotations for refined products at the Gulf were reported during the week ended Feb. 17. Reports from Southwestern refiners indicated there were numerous inquiries for heavy oils and kerosine and also increased buyer interest in aviation and regular gasolines. An Italian inquiry for 5000 tons each of gasoline and kerosine for March loading was reported. Kerosine was said to be scarce.

A refiner reported selling 25,000 to 30,000 bbls. of grade "C" fuel, ships' bunkers, at $1.05 a bbl., adding that he had bunkered three boats so far this month and that eight more were due during the second half. "The boats are for foreign and domestic shipment, and are picking up products under contract," he said.

Another Gulf refiner said he had sold 5000 bbls. of grade "C" fuel, ships' bunkers, at $0.90 per bbl. and 300 tons of diesel oil, ships' bunkers, at $1.70. A third refiner reported two sales of grade "C" fuel, ships' bunkers, one of 4300 bbls., the other of 500 tons, at $1.00. Three refiners reported offering Bunker "C" fuel for ships' bunkers at $0.90. One of them said he was "making spot sales daily" at that price. Quotations reported for grade "C" fuel, ships' bunkers, by other refiners ranged up to $1.05, and quotations for cargo lots ranged from $1.00 to $1.05.

Atlantic Coast

NEW YORK, Feb. 17.—Prices for 72-74 octane gasoline at Philadelphia were up 0.25c on the low at 6.75 to 7.75c the past week. Quotations reported for No. 5 fuel oil at Portland and Boston were up 10c to $2.10 and $1.80 a bbl. at the two points respectively. High octane gasoline was "in pretty good shape" some suppliers said. Demand for kerosine and fuel oils continued heavy and offerings for open spot sales were still limited, reports indicated. There was an unconfirmed report of a 1,000,000-gal. sale of kerosine and No. 2 fuel at 6.25c and 5.75c, respectively.

A Philadelphia supplier who had been quoting 6.50c for 72-74 octane gasoline said he had advanced his quotation to 6.75c and that he had discontinued quoting on 65-66 and 68-70 octanes. One other supplier reported quoting 6.75c for 65-66 octane at Philadelphia.

A supplier who had been out of the market on kerosine and fuel oil for some time said he was now offering kerosine for open spot sale at 6c, New York, in tank cars. Tank car quotations reported by other New York suppliers ranged from 5.60 to 6.50c.

Mid-Western

CHICAGO, Feb. 17.—Quotations on all refined products were reported unchanged by refiners and tank car marketers here the past week. Despite the milder weather prevailing throughout the middle west, demand for burner fuels continued good. Toward the end of the week three marketers and some refiners said they noticed a slight improvement in gasoline demand.

Refiners' gasoline quotations ranged from 3.75 to 4.25c for 62 oct. and below, 4c for 63-66, 4.25 to 4.75 for 67-69, and 4.50 to 5 for 70-72 oct., F.O.B. Group 3. Marketers' gasoline quotations ranged from 3.125 to 3.75 for 62 and below, 3.50 to 4 for 63-66, 3.50 to 4.25 for 67-69, and 3.75 to 4.50 for 70-72, F.O.B. Group 3.

Marketers reported the following spot sales: 4 cars of 62 and below at 3.125, 3 cars of 63-66 at 3.625, 1 car of 67-69 at 3.875, 8 cars of 70-72 at 3.875, 12 cars of 70-72 leaded at 4.125, and 13 cars of Ethyl at 5c, F.O.B. Group 3.

California

LOS ANGELES, Feb. 17.—Heavy fuel oil prices were advanced to 90c per barrel, San Pedro base, during the past week by Tidewater Associated, General Petroleum, and Union Oil, following an advance by Shell on Feb. 9. Notwithstanding this advance, light fuel oil was reported available at 50c per barrel, 5c less than last week. Although no sales of heavy oil were reported, larger quantities were said to be available at under 50c per barrel.

Independent third-grade gasoline was said to be somewhat firmer at a rack price of 6.25c a gallon, up 0.25c as result of heavy buying by operators of chain service stations, with large storage capacity.

N.P.N. Gasoline Index

	Dealer T.w. Cents per	Tank Car Gallon
Feb. 19	9.68	5.94
Month ago	9.78	5.97
Year ago	9.35	5.40

Dealer index is an average of "undivided" dealer prices, ex-tax, in 50 cities.

Tank car index is a weighted average of 9 wholesale markets for regular-grade gasoline.

Sohio Cuts Toledo Price

CLEVELAND, Feb. 19.—Standard Oil Co. of Ohio has announced a reduction in its Toledo gasoline prices of 0.5c on tank wagon, 1c retail, effective today. New X-70 (regular) prices, exclusive of 5c taxes, are 8c tank wagon to divided accounts, and 10c retail at company-operated stations.

REFINERY TANK CAR MARKETS

All prices on this page are publisher's opinion of open market quotations or sales, for spot shipment (10 to 15 days) unless otherwise stated. Prices in cents per gallon, except heavy fuel oils in dollars per barrel of 42 gallons, wax and petrolatums in cents per pound in barrels, tank car lots, FOB refineries in districts designated, except where otherwise noted. Inter-refinery and export prices not included unless so stated in the respective markets. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude. Unless otherwise noted, gasoline octane ratings are determined by C.F.R. Motor method, A.S.T.M. D-357-33T; and lubricating oil specifications determined according to A.S.T.M. methods, unless otherwise noted

Gasoline

Prices Effective	Feb. 19	Feb. 12
OKLAHOMA Refiners' Quotations & Sales Prices		
U. S. Motor: (Oct. L-3)		
62 oct. & below	3.75 – 4.125	3.75 – 4.125
63-66 oct.	4.00 –4.4375	4.00 –4.4375
67-69 oct.	4.25 – 4.75	4.25 – 4.75
70-72 oct.	4.50 – 5.00	4.50 – 5.00
60-62 400 e.p.	(c) 3.875–4.25	(c) 3.875–4.25
WESTERN PENNA. REFINERS' QUOTATIONS		
Bradford-Warren:		
Motor gasoline:		
U.S. Motor (58-62°)	(a)5.00	(a)6.75
65 oct. (CFR motor method)	(a)6.75	(a)6.75
66-68 oct. (L-3)	(a)6.75	.....
"Q" gasoline	6.75 – 7.00	6.75–7.00
75-76 oct. (L-3)	(a) 7.00 –7.05	(a)7.05
Other districts:		
Motor gasoline:		
U. S. Motor (58-62° gravity):	(a)4.50	.....
66-68 oct. (L-3)	(a)6.00	(a)6.00
"Q" gasoline	5.50 – 5.75	5.50 – 5.625
75-76 oct. (L-3)	(a)6.25	(a)6.25
CENTRAL MICHIGAN (h)		
Str.-Run Gasoline	(i) 4.00 –4.25	(i)4.00 –4.25
U. S. Motor: (Oct. L-3)		
67-69 oct.	5.50 – 6.25	5.50 – 6.25
72-74 oct.	6.25 – 7.00	6.25 – 7.00

Prices Effective	Feb. 19	Feb. 12
CALIFORNIA		
U. S. Motor:		
54-58 gravity, for instate shipment	6.25 – 9.00	5.75 – 9.25
54-58 gravity, for outside state shipment	6.50 – 9.00	6.50 – 9.00
58-61 gravity, 375-400 e.p., 65 oct. & above	7.75 – 9.75	7.25 – 9.75
N. TEX. REFINERS' QUOTATIONS (b)		
U. S. Motor: (Oct. L-3)		
62 oct. & below	3.875– 4.25	3.875– 4.25
63-66 oct.	4.125– 4.25	4.125– 4.25
67-69 oct.	4.375– 4.50	4.375– 4.50
70-72 oct.	4.625– 5.00	4.625– 5.00
60-62, 400 e.p.	(c) 3.875–4.00	(c) 3.875–4.00
KANSAS (For Kansas destinations only)		
U. S. Motor: (Oct. L-3)		
62 oct. & below	(a)4.375	(a)4.375
67-69 oct.	(a)4.625	(a)4.625
70-72 oct.	(a)5.125	(a)5.125
W. TEX. REFINERS' QUOTATIONS (b)		
U. S. Motor: (Oct. L-3)		
62 oct. & below	(c) 4.00 –4.25	(c) 4.00 –4.25
63-66 oct.	(a) 4.50 –4.625	(a) 4.50 –4.625
67-69 oct.	(c) 4.50 –4.75	(c) 4.50 –4.75
70-72 oct.	(c) 4.75 –5.00	(c) 4.75 –5.00

Prices Effective	Feb. 19	Feb. 12
CENT. W. TEX. REFINERS' QUOTATIONS (Prices to truck transports)		
U. S. Motor: (Oct. L-3)		
62 oct. & below	(a)4.00	(a)4.125
63-66 octane	(a)4.625	(a)4.75
66-70 octane	(f)	(f)
E. TEX. REFINERS' QUOTATIONS		
U. S. Motor: (Oct. L-3)		
70-72 oct.	(a)4.75	(a)4.75
60-62, 400 e.p.	(a)4.25	(a)4.25
N. LA. REFINERS' QUOTATIONS (For shipment to La. & Ark.)		
U. S. Motor: (Oct. L-3)		
62 oct. & below	(a) 4.125–4.375	(a) 4.125–4.375
63-66 oct.	(a) 4.375–4.625	(a) 4.375–4.625
70-72 oct. leaded	(a) 4.875–5.125	(a) 4.875–5.125
ARKANSAS REFINER'S QUOTATIONS (F.o.b. Ark. plant of one refiner, for shipment to Ark. & La.)		
U. S. Motor: (Oct. L-3)		
62 oct. & below	4.00	4.00
67-69 oct.	4.50	4.50
70-72 oct.	5.00	5.00
OHIO (S. O. Ohio quotations for statewide delivery and subject to exceptions for local price disturbances)		
70-72 oct. (ASTM M.M.)	7.00	7.00

(*Continued on next page*)

MID-WESTERN REFINERS' TANK CAR QUOTATIONS

Prices in this Midwestern Refiners' Tank Car Market table are gathered from refiners from their offices located in Chicago and the surrounding territory. While the prices are quoted on a Group 3 (Oklahoma) freight rate basis, this is in accordance with the custom of the oil industry which uses Group 3 as a price basis for the ease of comparing prices even when the material originates in another refining district. All other gasoline prices are given by and for the particular refining district where the material is made and from which it is shipped.

Gasoline

Prices Effective	Feb. 19	Feb. 12
U. S. Motor: (Oct. L-3)		
62 oct. & below	3.75 – 4.25	3.75 – 4.25
63-66 oct.	(c)4.00	(c)4.00
67-69 oct.	4.25 – 4.75	4.25 – 4.75
70-72 oct.	4.50 – 5.00	4.50 – 5.00

Kerosine

41-43 grav. w.w.	3.75 – 4.25	3.75 – 4.25
42-44 grav. w.w.	3.875– 4.625	3.875– 4.625

Fuel and Gas Oils

Prices Effective	Feb. 19	Feb. 12
No. 1 p.w.	3.75 – 3.875	3.75 – 3.875
No. 1 straw	(c) 3.625–3.75	(c) 3.625–3.75
No. 2 straw	3.50 – 3.625	3.50 – 3.625
No. 3	3.375– 3.50	3.375– 3.50
No. 5	(a)$0.70	(a $0.70
No. 6	(c) $0.50–$0.55	(c) $0.50–$0.55
Range oil	(c) 3.75 –4.00	(c) 3.75 –4.00

Naphtha and Solvent

Prices Effective	Feb. 19	Feb. 12
(FOB Group 3 as quoted by two Chicago sellers)		
Stoddard solvent	6.375	6.375
Cleaners' naphtha	6.875	6.875
V. M. & P. naphtha	6.875	6.875
Mineral spirits	5.875	5.875
Rubber solvent	6.875	6.875
Lacquer diluent	7.875	7.875

Daily range of gasoline prices as reported in PLATT'S OILGRAM (Week Ended Feb. 16, 1940)

	Feb. 12	Feb. 13	Feb. 14	Feb. 15	Feb. 16
U. S. Motor, (Octane Number determined according to L-3 Method in Okla., Texas and Mid-Western Districts):					
62 octane and below:					
Oklahoma	3.75 – 4.125	3.75 – 4.125	3.75 – 4.125	3.75 – 4.125	3.75 – 4.125
(a) North Texas	3.875– 4.25	3.875– 4.25	3.875– 4.25	3.875– 4.25	3.875– 4.25
West Texas	(c) 4.00 –4.25	(c) 4.00 –4.25	(c) 4.00 –4.25	(c) 4.00 –4.25	(c) 4.00 –4.25
Mid-Western (Group 3 basis)	3.75 – 4.25	3.75 – 4.25	3.75 – 4.25	3.75 – 4.25	3.75 – 4.25
63-66 octane:					
Oklahoma	4.00 –4.4375	4.00 –4.4375	4.00 –4.4375	4.00 –4.4375	4.00 –4.4375
(a) North Texas	4.125– 4.25	4.125– 4.25	4.125– 4.25	4.125– 4.25	4.125– 4.25
West Texas	(a) 4.50 –4.625	(a) 4.50 –4.625	(a) 4.50 –4.625	(a) 4.50 –4.625	(a) 4.50 –4.625
Mid-Western (Group 3 basis)	(c)4.00	(c)4.00	(c)4.00	(c)4.00	(a)4.00
67-69 octane:					
Oklahoma	4.25 – 4.75	4.25 – 4.75	4.25 – 4.75	4.25 – 4.75	4.25 – 4.75
(a) North Texas	4.375– 4.50	4.375– 4.50	4.375– 4.50	4.375– 4.50	4.375– 4.50
West Texas	(c) 4.50 –4.75	(c) 4.50 –4.75	(c) 4.50 –4.75	(c) 4.50 –4.75	(c) 4.50 –4.75
Mid-Western (Group 3 basis)	4.25 – 4.75	4.25 – 4.75	4.25 – 4.75	4.25 – 4.75	4.25 – 4.75
70-72 octane:					
Oklahoma	4.50 – 5.00	4.50 – 5.00	4.50 – 5.00	4.50 – 5.00	4.50 – 5.00
(a) North Texas	4.625– 5.00	4.625– 5.00	4.625– 5.00	4.625– 5.00	4.625– 5.00
West Texas	(c) 4.75 –5.00	(c) 4.75 –5.00	(c) 4.75 –5.00	(c) 4.75 –5.00	(c) 4.75 –5.00
East Texas	(a)4.75	(a)4.75	(a)4.75	(b)4.75	(b)4.75
Mid-Western (Group 3 basis)	4.50 – 5.00	4.50 – 5.00	4.50 – 5.00	4.50 – 5.00	4.50 – 5.00
Motor Gasoline, 60-64 octane:					
New York harbor	.....	6.50 – 6.70	6.50 – 6.70	6.50 – 6.70	6.50 – 6.70
Philadelphia district	.....	6.50 – 6.75	6.50 – 6.75	6.50 – 6.75	6.50 – 6.75
Baltimore district	.....	6.25 – 6.75	6.25 – 6.75	6.25 – 6.75	6.25 – 6.75
Motor Gasoline, 72-74 octane:					
New York harbor	.....	6.50 – 7.70	6.50 – 7.70	6.50 – 7.70	6.50 – 7.70
Philadelphia district	.....	6.50 – 7.75	6.50 – 7.75	6.75 – 7.75	6.75 – 7.75
Baltimore district	.....	6.75 – 7.75	6.75 – 7.75	6.75 – 7.75	6.75 – 7.75
U. S. Motor, 58-62°:					
Bradford-Warren (Western Penna.)	(a)5.00	(a)5.00	(a)5.00	(a)5.00	(c)5.00
Other districts (Western Penna.)	(f)	(f)	(a)4.50	(a)4.50	(a)4.50
Motor Gasoline, 65 octane (L-3)					
65 octane (CFR Motor method)					
Bradford-Warren (Western Penna.)	(a)6.75	(a)6.75	(a)6.75	(a)6.75	(a)6.75
66-68 octane (L-3)					
Bradford-Warren (Western Penna.)	(a)6.75	(a)6.75	(a)6.75	(a)6.75	(a)6.75
Other Districts	(a)6.00	(a)6.00	(a)6.00	(a)6.00	(a)6.00
"Q" Gasoline:					
Bradford-Warren (Western Penna.)	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00
Other Districts (Western Penna.)	5.50 – 5.625	5.50 – 5.625	5.50 – 5.75	5.50 – 5.75	5.50 – 5.75
75-76 Octane: (L-3)					
Bradford-Warren (Western Penna.)	(a)7.05	(c) 7.00 – 7.05	(a) 7.00 –7.05	(a) 7.00 –7.05	(a) 7.00 –7.05
Other Districts (Western Penna.)	(a)6.25	(a)6.25	(a)6.25	(a)6.25	(a)6.25

(a) One refiner quoting. (b) One supplier quoting. (c) Two refiners quoting. (d) Two suppliers quoting. (e) Prices nominal. (f) No quotations reported. (g) Prices FOB Central Michigan refinery group basis for shipment within Michigan. Shipments may originate at plants outside Central group. (h) For shipment to Texas and New Mexico destinations. (i) Excluding Detroit shipment.

REFINERY TANK CAR MARKETS

All prices on this page are publisher's opinion of open market quotations or sales, for spot shipment (10 to 15 days). Prices in cents per gallon except heavy fuel oils in dollars per barrel of 42 gallons, tank car lots, FOB refineries in districts designated, except where otherwise noted. Inter-refinery and export prices not included, unless so stated in the respective markets. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude. Unless otherwise noted, gasoline octane ratings are determined by C.F.R. Motor method, A.S.T.M. D-357-33T; and lubricating oil specifications determined according to A.S.T.M. methods, unless otherwise noted.

Natural Gasoline Prices

(Prices to blenders on freight basis shown below. Shipments may originate in any Mid-Continent manufacturing district.)

Prices Effective	Feb. 19	Feb. 12
FOB GROUP 3		
Grade 26-70	(l)2.00	(m)2.00
FOB BRECKENRIDGE		
Grade 26-70	(l)1.75	(l)1.75
CALIFORNIA (F.o.b. plants in Los Angeles basin)		
75-85, 350-375 e.p. for blending	6.00 – 6.25	6.00 – 6.25

Kerosine

WESTERN PENNA. REFINERS' QUOTATIONS		
Bradford-Warren:		
45 grav. w.w.	(h)5.125	(h)5.125
46 grav. w.w.	(e)5.375	(e)5.375
Other districts:		
45 grav. w.w.	4.875 – 5.00	4.875 – 5.00
46 grav. w.w.	5.00 – 5.125	5.00 – 5.125
47 grav. w.w.	5.00 – 5.25	5.00 – 5.25
CENTRAL MICHIGAN (a)		
47-49 gravity w.w.	4.80 – 5.10	4.75 – 5.10
OKLAHOMA Refiners' Quotations & Sales Prices		
41-43 grav. w.w.	3.75 – 4.25	3.75 – 4.25
42-44 grav. w.w.	3.875 – 4.625	3.875 – 4.625
KANSAS (For Kansas destinations only)		
41-43 gravity w.w.	(e)4.25	(e)4.25
42-44 gravity w.w.	(e)4.375	(e)4.375
N. TEX. REFINERS' QUOTATIONS (b)		
41-43 grav. w.w.	(h)3.875	(h)3.875
E. TEX. REFINERS' QUOTATIONS		
41-43 grav. w.w.	(e) 3.50 –3.75	(e) 3.50 –3.75
N. LA. REFINERS' QUOTATIONS (For shipment to La. and Ark.)		
41-43 grav. w.w.	(e) 3.75 –4.00	(e) 3.75 –4.00
ARK. REFINER'S QUOTATIONS (F.o.b. Ark. plant of one refiner for shipment to Ark. and La.)		
41-43 grav. w.w.	4.00	4.00
CALIFORNIA		
40-43 grav. w.w.	4.50 – 6.00	4.50 – 6.00

Gas and Fuel Oils

WESTERN PENNA. REFINERS' QUOTATIONS		
Bradford-Warren:		
36-40 gravity	(n)	(h)4.75
Other districts: (Excluding Pittsburgh District Prices)		
36-40 gravity	3.875 – 4.50	3.875 – 4.50
CENTRAL MICHIGAN (a)		
P.W. Distillate	4.75 – 5.00	4.75 – 5.00
No. 3 gas oil, Str.	4.25 – 4.50	4.25 – 4.50
U.G.I. gas oil	3.00 – 3.75	3.00 – 3.75
Fuel Oils (Vis. at 100):		
500-700 Vis.	(e)3.25	(e)3.25
300-500 Vis.	2.75 – 3.75	2.75 – 3.75
100-300 Vis.	(e) 3.50 –3.75	(e) 3.50 –3.75
OKLAHOMA		
No. 1 P.W.	3.75 –3.8125	3.75 –3.8125
No. 1 straw	(h) 3.50 –3.75	(h)3.50 –3.75
No. 2 straw	3.50 – 3.625	3.50 – 3.625
No. 2 dark	(e)3.50	(e)3.50
U.G.I. gas oil	(h)3.25	(h)3.25
No. 3 fuel	3.375-3.4375	3.375-3.4375
No. 5 fuel	(n)	(n)
No. 6 fuel	(h)$0.50	(h)$0.50
14-16 fuel	(e)$0.85	(e)$0.85
Range Oil	3.75 – 3.875	3.75 – 3.875
KANSAS (For Kans. destinations only).		
No. 1 p.w.	(e)4.00	(e)4.00
No. 6 fuel	(h)$0.60	(h $0.60
N. TEX. REFINERS' QUOTATIONS (b)		
No. 1 P.W.	(e)3.875	(e)3.875
E. TEX. REFINERS' QUOTATIONS		
No. 1 p.w.	(e)3.375	(e)3.375
N. LA. REFINERS' QUOTATIONS (For shipment to La. and Ark.)		
10-14 grav.	(e) $0.65-$0.70	(e) $0.65–$0.70
ARK. REFINER'S QUOTATIONS (F.o.b. Ark. plant of one refiner, for shipment to Ark. and La.)		
No. 1	3.875	3.875
No. 2	3.625	3.625
28-32 zero fuel	3.50	3.50
Tractor Fuel	(j)4.25	(j)4.25

Prices Effective	Feb. 19	Feb. 12
CALIFORNIA		
San Joaquin Valley:		
Heavy fuel	$0.55 –$0.75	$0.55 –$0.75
Light fuel	$0.75 –$0.85	$0.75 –$0.85
Diesel fuel (per gal.)	2.75 – 4.00	2.75 – 4.00
Stove dist. (per gal.)	3.00 – 5.00	3.00 – 5.00
Los Angeles:		
Heavy fuel	$0.45 –$0.65	$0.45 –$0.65
Light fuel	$0.50 –$0.70	$0.55 –$0.70
Diesel fuel (per gal.)	2.25 – 4.00	2.25 – 4.00
Stove dist. (per gal.)	2.25 – 5.00	2.25 – 4.00
San Francisco:		
Heavy fuel	$0.80	$0.80
Light fuel	$0.90	$0.90
Diesel fuel (per gal.)	4.50	4.50
Stove dist. (per gal.)	5.50	4.50

Note: All above heavy fuels meet Pacific specification 400; light fuel, spec. 300; Diesel fuels, spec. 200; and stove distillate, spec. 100.

Neutral Oils

WESTERN PENNA. REFINERS' QUOTATIONS

Viscous Neutrals No. 3 col. (Viscosity at 70° F.)

200 Vis. (180 at 100°) 420-425 fl.		
0 p.t.	(e)30.50	(e)31.50
10 p.t.	(e)29.50	(e)30.50
15 p.t.	(e)28.50	(e)29.50
25 p.t.	27.00 –28.00	28.00 –29.00
150 Vis. (143 at 100) 400-405 fl.		
0 p.t.	(e)28.50	(e)29.50
10 p.t.	(e)27.50	(e)28.50
15 p.t.	(e)26.50	(e)27.50
25 p.t.	25.00 –26.00	26.00 –27.00

SOUTH TEXAS

Vis. Color		
Pale Oils: (*Vis. at 100°F*)		
100 No. 1½-2½	5.75 – 6.00	5.75 – 6.00
200 No. 2-3	7.50 – 7.75	7.50 – 7.75
300 No. 2-3	8.00 – 8.25	8.00 – 8.25
500 No. 2½-3½	9.00 – 9.25	9.00 – 9.25
750 No. 3-4	9.50 – 9.75	9.50 – 9.75
1200 No. 3-4	9.875-10.50	9.875-10.50
2000 No. 4	10.00 –10.75	10.00 –10.75
Red Oils:		
200 No. 5-6	7.50 – 7.75	7.50 – 7.75
300 No. 5-6	8.00 – 8.25	8.00 – 8.25
500 No. 5-6	9.00 – 9.25	9.00 – 9.25
750 No. 5-6	9.50 – 9.75	9.50 – 9.75
1200 No. 5-6	9.875-10.50	9.875-10.50
2000 No. 5-6	10.00 –10.75	10.00 –10.75

MID-CONTINENT (Vis. at 100° F.; F.o.b. Tulsa)

Pale Oils: (0 to 10 P.P.) Vis. Color		
60-85—No. 2	6.50 – 7.50	6.50 – 7.50
86-110—No. 2	6.75 – 8.00	6.75 – 8.00
150—No. 3	12.25 –13.75	12.25 –13.75
180—No. 3	13.00 –14.00	13.00 –14.00
200—No. 3	13.50 –14.50	13.50 –14.50
250—No. 3	14.50 –16.00	14.50 –16.00
280—No. 3	15.50 –17.25	15.50 –17.25
300—No. 3	17.50 –17.75	17.50 –17.75
Red Oils:		
180—No. 5	(e)13.50	(e)13.50
200—No. 5	13.00 –14.00	13.00 –14.00
280—No. 5	14.75 –16.00	14.75 –16.00
300—No. 5	(h)16.25–16.75	(h)16.25–16.75

Note: Viscous Neutrals, 15-25 p.p. generally are quoted 0.5c under 0-10 p.p. oils. Non-viscous oils, 15-25 p.p., generally are quoted 0.25c under 0-10 p.p. oils.

CHICAGO (Vis. at 100° F)

(e) Pale Oils 0 to 10 p.p. Vis. Color		
60-85—No. 2	8.25	8.25
86-110—No. 2	8.50	8.50
150—No. 3	12.75	12.75
180—No. 3	14.00	14.00
200—No. 3	14.50	14.50
250—No. 3	15.50	15.50

Prices Effective	Feb. 19	Feb. 12
CHICAGO (Continued)		
(e) Red Oils:		
180—No. 5	13.50	13.50
200—No. 5	14.00	14.00
250—No. 5	14.50	14.50
280—No. 5	15.50	15.50
300—No. 5	17.25	17.25

Note: Viscous oils, 15 to 30 p.p. are quoted 0.5c lower; 60-85 and 86-110 No. 2 non-viscous oils, 15 to 30 p.p., 0.25c lower. To obtain delivered prices in Chicago, add 0.25c per gal.

Cylinder Stocks

MID-CONTINENT (F.o.b. Tulsa)		
Bright Stocks:		
190-200 Vis. at 210° D.	(e)29.00	(e)29.00
150-160 Vis. at 210° D:		
0 to 10 p.p.	24.00 –25.00	24.00 –25.00
10 to 25 p.p.	23.00 –24.50	23.00 –24.50
25 to 40 p.p.	(h)24.00	(h)24.00
150-160 vis. at 210° E.	22.00 –24.00	22.00 –24.00
120 Vis. at 210° D:		
0 to 10 p.p.	22.75 –24.00	22.75 –24.00
25 to 40 p.p.	(e)22.50	(e)22.50
600 S.R. Dark Green	(e)8.00	(e)8.00
600 S.R. Olive Green	9.00 – 9.50	9.00 – 9.50
631 S.R.	(e)21.00	(e)21.00
Black Oil	(h) 4.00 –5.50	(h) 4.00 –5.50
(e) **CHICAGO** (Viscosity at 210°)		
Unfiltered Steam Refined:		
140	10.00	10.00
160	11.00	11.00
200	12.00	12.00
Bright stocks, 160 vis. at 210, No. 8 color:		
0 to 10 p.p.	24.75	24.75
15 to 25 p.p.	23.75	23.75
30 to 40 p.p.	23.25	23.25
F. filtered Cyl. Stock	14.50	14.50

Note: To obtain prices delivered in Chicago, add 0.25c per gal.

WESTERN PENNA. REFINERS' QUOTATIONS

600 S.R. filterable	(h) 15.00–16.00	16.00 –16.50
650 S.R.	(h) 18.00–19.00	h) 19.00–19.50
600 fl.	19.00 –20.00	20.00 –20.50
630 fl.	22.00 –24.00	24.00
Brt. stk, 145-155 vis. at 210°, 540-550 fl., No. 8 col.		
10 p.t.	(e)29.50	(e)29.50
15 p.t.	(e)28.50	(e)28.50
25 p.t.	25.00 –27.00	27.00 –28.00

Petrolatums

WESTERN PENNA. (Bbls., carloads; tank cars, 0.5c per lb. less.)		
Snow White	6.875 – 7.00	(o) 6.875–7.00
Lily White	5.875 – 6.00	(o) 5.875–6.00
Cream White	4.875 – 5.00	(o) 4.875–5.00
Light Amber	3.625 – 3.875	(o) 3.625–3.875
Amber	3.375 – 3.625	(o) 3.375–3.625
Red	3.125 – 3.375	(o) 3.125–3.375

Wax

WESTERN PENNA. REFINERS' QUOTATIONS

In bbls., carloads, N. Y.		
122-124 A.m.p., w.c. scale	(h) 5.50 –5.75	(h) 5.50 –5.75
124-126 A.m.p., w.c. scale	5.50 – 5.75	5.50 – 5.75

OKLAHOMA Refiners' Quotations & Sales Prices. (In bbls. or burlap bags, carloads)

124-126 A.m.p., w.c. scales	(h) 5.75 –6.00	(h) 5.75 –6.00

CHICAGO QUOTATIONS (FOB Chicago district refinery of one refiner, in bags or slabs loose, carloads. Melting points are E.M.P. (A.S.T.M.) methods; add 3° F. to convert into A.m.p.)

Fully refined:		
122-124 (bags only)	6.10	6.10
125-127	6.10	6.10
127-129	6.35	6.35
130-132	6.65	6.65
132-134	6.90	6.90
135-137	7.65	7.65

(a) Prices FOB. Central Michigan refinery group basis, for shipment within Mich. Shipments may originate at plants outside Central group. (b) For shipment to Texas and New Mexico destinations. (c) Excluding Detroit shipment. (e) One refiner quoting. (f) No quotations reported. (h) Two refiners quoting. (j) For shipment to Ark. points only. (k) Two suppliers quoting. (l) Quotations. (m) Sales. (n) No quotations reported. (o) These prices correct for Feb. 12 instead of prices published in Feb. 14 NPN, page 40.

TANK WAGON MARKETS

Tank car, tank wagon, dealer, and service station prices for gasoline **do not include taxes;** *they do, however, include inspection fees as shown in general footnote. Gasoline taxes, shown in separate column, include 1c federal, and state taxes; also city and county taxes as indicated in footnotes. Kerosine tank wagon prices also do not include taxes; kerosine taxes, where levied, are indicated in footnotes. Dealer and commercial consumer discounts are shown in footnotes. These prices in effect Feb. 19, 1940 as posted by principal marketing companies at their headquarters offices, but subject to later correction.*

S. O. New Jersey

Esso

(Regular Grade)

	Consumer Tank Car	Dealer T.W.	Gasoline Taxes	Kerosine T.W.
*Atlantic City, N. J.	7.6	8.7	4	8.1
*Newark, N. J.	7.6	8.7	4	8.1
Annapolis, Md.	8.35	9.35	5	9.50
Baltimore, Md.	7.75	8.75	5	8.5
Cumberland, Md.	9.15	10.15	5	10
Washington, D. C.	8.0	9	3	9.5
Danville, Va.	8.95	11.45	6	11.5
Norfolk, Va.	7.75	10.25	6	11
Petersburg, Va.	8.05	10.55	6	11.7
Richmond, Va.	8.05	10.55	6	11
Roanoke, Va.	9.25	11.75	6	11.5
Charleston, W. Va.	8.55	11.05	6	12.6
Parkersburg, W. Va.	7.85	9.85	6	11.2
Wheeling, W. Va.	8.85	10.75	6	12.2
Charlotte, N. C.	9.0	11.4	7	11.8
Hickory, N. C.	10.45	11.95	7	12.3
Mt. Airy, N. C.	10.3	11.8	7	12.2
Raleigh, N. C.	9.65	11.15	7	11.5
Salisbury, N. C.	9.95	11.45	7	11.9
Charleston, S. C.	7.75	10.25	7	9.25
Columbia, S. C.	8.6	11.1	7	11.5
Spartanburg, S. C.	9.3	11.8	7	12.2

Discount to undivided dealers on Esso: thru territory, except New Jersey points, which see in "Note" below: Dealer t.w. price less 0.5c per gal.

*Effective Sept. 14, 1939, S. O. New Jersey posted a minimum retail resale price of 11.9c thru New Jersey.

Note: While the above posted prices continue at Atlantic City and Newark, N. J., dealers will pay a net price of 8.6c per gal. for Esso. Dealers having pumps marked only, Esso, Esso Extra and "Standard" White gasoline will pay 8.1c per gal. for Esso.

Price basis to commercial consumers on motor fuels (Esso, Esso Extra and "Standard" White), in tank wagon delivery: To contract accounts, purchasing at least one full compartment at a time by hose connection: Effective March 12, 1937, in New Jersey, and March 8 in Maryland, District of Columbia, and in Arlington and Fairfax Counties in Virginia, on yearly purchases: from 2,500 to 100,000 gals., consumer t.w. price at time and place of delivery; 100,000 gals. per year consumer tank car price, plus 0.5c per gal. Generally consumer t.w. price in foregoing states is equivalent of dealer t.w. price, less 0.5c per gal.; and

Effective May 15, 1937, (by tank wagon) in West Virginia, commercial consumers taking deliveries of 100 gals. or more at one time will be billed at the posted consumer t.w. price. Deliveries less than 100 gals. will be billed at 4c per gal. over posted consumer t.w. price. Generally, posted consumer t.w. price will be equivalent to the dealer price less 0.5c per gal.; and

Effective Aug. 10, 1938, in Virginia (except Arlington and Fairfax counties), accounts buying up to 100,000 gals. per year, consumer tank car price, plus 2c per gal.; accounts buying over 100,000 gals. per year, consumer t.c. plus 0.5c per gal. and

Effective Jan. 16, 1939 in North Carolina, and Jan. 23, 1939 in South Carolina, on single deliveries of 50 gals. or more, consumer tank wagon price; single deliveries of less than 50 gals., 4c per gal. over consumer t.w. price. Generally, posted consumer t.w. price will be equivalent to dealer price less 0.5c per gal.

Kerosine Discount: 1c off t.w. price for 25 gals., or more, under contract thru territory (Baltimore City contract not necessary) except no discount in state of New Jersey.

Socony-Vacuum Oil Co., Inc.

(S. O. New York Division)

Socony Mobilgas

(Regular Grade)

	Consumer Tank Car	"Split" Dealer T.W.	Gasoline Taxes	Kerosine T.W.
Metropolitan N. Y. City: Boroughs of Manhattan, Bronx and Brooklyn (Kings and Queens)	7.7	9.2	*5	8.50
Borough of Richmond (Staten Is.)	7.7	9.2	*5	8.50
Albany, N. Y.	7.6	9.2	5	8.30
Binghamton, N. Y.	8.9	9.5	5	9.30
Buffalo, N. Y.	8.1	9.5	5	8
Jamestown, N. Y.	7.7	9.5	5	7.9
Plattsburg, N. Y.	8.1	10.6	5	8.90
Rochester, N. Y.	8.3	10	5	8.5
Syracuse, N. Y.	8.2	9.5	5	8.80
Bridgeport, Conn.	7.8	8.8	4	8.0
Danbury, Conn.	8.3	9.6	4	7.5
Hartford, Conn.	7.9	9.3	4	8.40
New Haven, Conn.	7.8	8.8	4	7.5
Bangor, Me.	7.9	10	5	8.0
Portland, Me.	7.6	9.4	5	8.50
Boston, Mass.	7.5	9	4	8.50
Concord, N. H.	8.4	10.7	5	9.10
Lancaster, N. H.	9.2	11.7	5	9.90
Manchester, N. H.	8.3	10.3	5	8.90
Providence, R. I.	7.5	9.3	4	8.50
Burlington, Vt.	8.1	10.4	5	8.70
Rutland, Vt.	8.5	10.5	5	8.90

*Plus 2% city sales tax computed at time of each sale.

Discount to undivided dealers: 0.5c less than "split" dealer t.w.

Price basis to commercial consumers: on gasoline, on annual purchases, effective about Feb. 15, 1939, thru New York and New England: 10,000 gals. and under, tank car price plus 2c per gal.; 10,000 to 50,000 gals., t.c. plus 1.5c; 50,000 to 200,000 gals., t.c. plus 1c; 200,000 gals. and over, t.c. plus 0.5c per gal.

Private consumers pay undivided dealer price, plus 2c. Private consumers receiving full compartment deliveries of at least 200 gals., will receive a discount of 0.5c per gal.

Atlantic Refining

Atlantic White Flash Gasoline

(Regular Grade)

	Commercial Tank Car	Dealer T.W.	Gasoline Taxes	Kerosine T.W.
Philadelphia, Pa.	7.5	9	5	10
Pittsburgh	8	9.5	5	10.5
Allentown	8	9.5	5	10.5
Erie	8	9.5	5	10
Scranton	7.5	10	5	10.5
Altoona	8	10	5	10.5
Emporium	8	10	5	10.5
Indiana	8	10	5	10.5
Uniontown	8	10	5	10.5
Harrisburg	8	9.5	5	10.5
Williamsport	8.5	10	5	10.5
Dover, Del.	...	8.5	5	10.5
Wilmington	...	9	5	10
Boston, Mass.	...	9	4	8.5
Springfield, Mass.	...	9	4	9.0
Worcester, Mass.	...	9.5	4	8.0
Fall River, Mass.	...	8.5	4	8.5
Hartford, Conn.	...	9.3	4	8.5
New Haven, Conn.	...	8.8	4	8.5
Providence, R. I.	...	9.3	4	8.5
Atlantic City, N. J.	...	8.6	4	8.1
Camden, N. J.	...	8.6	4	8.1
Trenton, N. J.	...	8.6	4	8.1
Annapolis, Md.	...	9.35	5	10.5
Baltimore, Md.	...	8.75	5	9.5
Hagerstown, Md.	...	9.85	5	10
Richmond, Va.	...	10.55	6	11
Wilmington, N. C.	...	10.35	7	10.8
Brunswick, Ga.	...	10	7	*11
Jacksonville, Fla.	...	9	8	10

*Georgia has kerosine tax of 1c per gal., not included in above price.

Discount to undivided dealers on gasoline: Dealer t.w. less 0.5c per gal. except in Georgia and Florida, dealer t.w. and undivided dealer price is same.

Discounts on gasoline: At Scranton, Pa., 1c per gal. voluntary discount allowed to dealers only, effective July 8, 1939.

Price basis to commercial consumers: consumers under contract, in Penna. and Delaware, effective Mar. 11, 1937, on yearly gasoline purchases taking full compartment hose deliveries, using 100,000 gals. or more per year, tank car price plus 0.5c per gal.; consumers taking less than 100,000 gals., undivided dealer price. Consumers under contract and not under contract, taking less than full compartment delivery, and consumers not under contract taking full compartment delivery, get divided dealer price. Consumers taking less than 25 gals., t.w. delivery, get 4c above undivided dealer price.

Kerosine discount: Thru Pennsylvania and Delaware, 2c per gal. off t.w. price on t.w. deliveries of 25 gals. or more at one time, effective since Oct. 29, 1936.

S. O. Ohio

Sohio X-70 Gasoline

(Regular Grade)

	Consumer T.W.	†Divided Dlr.	‡S.S.	Gasoline Taxes	Kerosine T.W.
Ohio, Statewide	10.5	9.5	12.5	5	*12
Akron	10.5	8.5	10.5	5	*8.5
Cincinnati	10.5	9	11.5	5	*12
Cleveland	10.5	8.5	11	5	*12
Columbus	10.5	9	11.5	5	*12
Dayton	10.5	9	11.5	5	*12
Marietta	10.5	9	11.5	5	*12
Portsmouth	10.5	9.5	12.5	5	*12
Toledo	10.5	8	10	5	*12
Youngstown	10.5	9	11.5	5	*11.5

Renown Gasoline

(Third Grade)

Ohio, Statewide	10.5	9.5	12.5	5	....
Akron	10.5	8.5	10.5	5	....
Cincinnati	10.5	9	11.5	5	....
Cleveland	10.5	8.5	11	5	....
Columbus	10.5	9	11.5	5	....
Dayton	10.5	9	11.5	5	....
Marietta	10.5	9	11.5	5	....
Portsmouth	10.5	9.5	12.5	5	....
Toledo	10.5	8	10	5	....
Youngstown	10.5	9	11.5	5	....

Note: Prices at other Ohio points may be obtained by writing NPN.

*Ohio has kerosine tax of 1c per gal., not included in above prices.

†This price also to authorized agents, exclusive of 0.5c rental.

‡Prices are at company-operated service stations.

Discount to undivided dealers: 0.5c less than divided dealer t.w.

Sales tax: Ohio's 3% sales tax, effective Jan. 27, 1935, is added "where assessable to regular posted prices", S. O. Ohio says.

Commercial Statewide Tank Wagon Q.D.A. on all grades of gasoline, to contract accounts: Effective June 1, 1939, discount off posted consumer t.w. price on monthly purchases: 0 to 999 gals., 1c; 1,000 to 4,999 gals., 1.5c; and 5,000 gals. and over, 2c per gal. Q.D.A. in many areas is at variance with this statewide Q.D.A.

S. O. Kentucky

Crown Gasoline

(Regular Grade)

	Consumer T.W.	Net Dlr.	Gasoline Taxes	Kerosine T.W.
Covington, Ky.	9	9	6	9.5
Lexington, Ky.	10.5	10.5	6	10
Louisville, Ky.	9.5	9.5	6	9
Paducah, Ky.	9.5	9.5	6	9
Jackson, Miss.	9	9	7	*9.5
Vicksburg, Miss.	9.5	9.5	7	*9
Birmingham, Ala.	10.5	10.5	*8	9
Mobile, Ala.	9.5	9.5	*9	8
Montgomery, Ala.	10.5	10.5	*9	*10
Atlanta, Ga.	10	10	7	*9
Augusta, Ga.	10.5	10.5	7	*9
Macon, Ga.	9.5	9.5	7	*9.5
Savannah, Ga.	9.5	9.5	7	*8
Jacksonville, Fla.	9	9	8	8
Miami, Fla.	9	9	8	8
Pensacola, Fla.	9.5	9.5	*9	8.5
Tampa, Fla.	13	10	8	8

****Standard or Kyso Gasoline**

(Third Grade)

Covington, Ky.	8	8	6	....
Lexington, Ky.	9.5	9.5	6	....
Louisville, Ky.	7.5	7.5	6	....
Paducah, Ky.	8	8	6	....
Jackson, Miss.	8	8	7	....
Vicksburg, Miss.	8.5	8.5	7	....
Birmingham, Ala.	8	8	*8	....
Mobile, Ala.	7.5	7.5	*9	....
Montgomery, Ala.	9	9	*9	....
Atlanta, Ga.	6.5	6.5	7	....
Augusta, Ga.	9.5	9.5	7	....
Macon, Ga.	8.5	8.5	7	....
Savannah, Ga.	8	8	7	....
Jacksonville, Fla.	8	8	8	....
Miami, Fla.	8	8	8	....
Pensacola, Fla.	8	8	*9	....
Tampa, Fla.	11.5	9	8	....

Temporary discounts to tank wagon consumers at Tampa: on Crown gasoline, 3c per gal. below consumer t.w. price; on Standard, 2.5c.

**Taxes:* In the tax column is included these city and county gasoline taxes at the following points: Mobile, 2c city; Birmingham, 1c city; Montgomery 1c city and 1c county; Pensacola, 1c city. Georgia and Montgomery, Ala. have kerosine taxes of 1c per gal., and Mississippi 0.5c, not included in above prices.

***Standard Gasoline, a leaded third-grade, is sold in Kentucky, Alabama, Georgia and Florida; Kyso Gasoline, an unleaded third-grade, is sold in Mississippi.

Above prices include these inspection fees on both gasoline and kerosine unless otherwise specified, per gallon, figured on basis of 50 gallons per barrel:
Alabama, 1/40c on gasoline, 1/2c on kerosine; Arkansas, 1/5c per gal. in a single barrel, 1/20c per gal. in bulk; Florida, 1/8c; Illinois, 3/100c; Indiana, 1/5c per gal. in lots up to 25 bbls.; 2/25c per gal. in lots of 25 bbls. or more; Kansas, 1/50c, (3/50c can be charged to meet inspection department expenses); Louisiana, 1/32c; Minnesota, 1/25c; Missouri, 3/100c; Nebraska, 3/100c; Nevada, gasoline, 1/20c; North Carolina, 1/4c; North Dakota, 1/20c; Oklahoma, 2/25c per gal. lots of more than 50, in bbls., 1/5c in lots less than 50 bbls.; South Carolina, 1/8c; South Dakota, 1/10c; Tennessee, 2/5c; and Wisconsin, 3/100c.
Kerosine inspection fee only: Iowa, 3/50c; Michigan, 1/5c per gal.

TANK WAGON MARKETS

Tank car, tank wagon, dealer, and service station prices for gasoline **do not include taxes;** *they do, however, include inspection fees as shown in general footnote. Gasoline taxes, shown in separate column, include 1c federal, and state taxes; also city and county taxes as indicated in footnotes. Kerosine tank wagon prices also do not include taxes; kerosine taxes, where levied, are indicated in footnotes. Dealer and commercial consumer discounts are shown in footnotes. These prices in effect Feb. 19, 1940 as posted by principal marketing companies at their headquarters offices, but subject to later correction.*

S. O. Indiana

Red Crown (*Regular Grade*)
Stanolind (*Third Grade*)

	Red Crown Cons. T.W.	Dealer Prices Red Crown T.W.	Dealer Prices Stano-lind T.W.	Gaso-line Taxes	Kero-sine T.W.
Chicago, Ill.	11.1	9.1	6.9	4	10
Decatur, Ill.	11.1	8.1	6	4	8.5
Joliet, Ill.	11.1	9.6	7.4	4	10
Peoria, Ill.	11.1	8.7	8.1	4	10
Quincy, Ill.	10.9	9.4	8.5	4	9.8
Indianapolis, Ind.	11.8	9.3	8.4	5	*10
Evansville, Ind.	11.6	10.1	9.4	5	*10.5
South Bend, Ind.	11.8	10.3	7.3	5	*10
Detroit, Mich.	9.6	8.1	7.6	4	7.6
Grand Rapids, Mich.	9.9	7.7	7.2	4	9.7
Saginaw, Mich.	10.8	9.3	8.6	4	9.3
Green Bay, Wis.	11.9	10.4	9.9	5	10
Milwaukee, Wis.	11.3	9.8	9.3	5	10.2
La Crosse, Wis.	11.5	10	9.5	5	10.4
Minneapolis-St. Paul	11.5	9.5	9	5	10.4
Duluth, Minn.	11.9	10.4	9.9	5	10.8
Mankato, Minn.	11.5	10	9.5	5	10.4
Des Moines, Ia.	10.9	8.4	7.4	4	*9.0
Davenport, Ia.	11.1	9.6	7.5	4	*10
Mason City, Ia.	11.3	9.8	6.9	4	*10.2
St. Louis, Mo.	10.7	9.2	7.5	*4	8
Kansas City, Mo.	10.4	8.9	6.9	*4	8
St. Joseph, Mo.	10.4	8.0	7.5	*4	7.9
Fargo, N. D.	12.7	11.2	10.7	5	11.6
Huron, S. D.	12	10.5	10	5	10.9
Wichita, Kans.	9.3	7.1	5.5	4	7

*Taxes: in the tax column is included these city and state gasoline taxes at following points: Kansas City, St. Joseph and St. Louis, 1c city tax. Kerosine taxes: Indiana has 4c, Iowa 3c per gal. state tax, not included in above prices.

Discount to commercial consumers: Effective Jan. 1, 1935, thru territory, except Michigan effective Feb. 1, on purchases per month, discount off t.w. prices: all gasolines, 25 to 1,000 gals., at t.w. price; 1,000 gals., or more, 1.5c off t.w. on Ethyl and Red Crown, and 1c on Stanolind (latter effective June 9, 1937). Minimum delivery is 25 gals.

S. O. Nebraska

Standard Red Crown Gasoline
(*Regular Grade*)

	T.W.	Dealer	Gaso-line Taxes	Kero-sine T.W.
Omaha, Neb.	10.5	6.9	6	9.8
McCook	10.5	7.9	6	9
Norfolk	10.5	8.4	6	9.5
North Platte	11.8	8.9	6	10
Scottsbluff	12.5	9.5	6	10

Discounts to commercial consumers: for tank wagon deliveries covered only by Standard Commercial Consumer Contract, effective January 1, 1935.

S. O. Louisiana

Esso
(*Regular Grade*)

	Consumer Tank Car	Dealer T.W.	Gaso-line Taxes	Kero-sine T.W.
Little Rock, Ark.	7.75	10.25	7.5	10
Alexandria, La.	7.25	9.75	8	*11.5
Baton Rouge, La.	7.25	9.75	8	*9.5
New Orleans, La.	7.25	9.75	8	*9
Lake Charles, La.	7.25	9.75	8	*11.5
Shreveport, La.	6	8.5	8	*10
Lafayette, La.	7.5	10	8	*10
Bristol, Tenn.	10.25	9.75	8	13
Chattanooga, Tenn.	9.5	12	8	12
Knoxville, Tenn.	10	12.5	8	13
Memphis, Tenn.	8	10.5	8	11
Nashville, Tenn.	9	9.5	8	11

*Taxes: Louisiana has kerosine tax of 1c per gal.; in addition New Orleans has 1c parish tax, none of which are included in above prices.

Price basis to dealers: Undivided dealers get dealer price, less 0.5c.

Price basis to commercial consumers: Effective May 15, 1937, thru territory: commercial consumers taking 50 gals. or more at one time will be billed at posted consumer t.w. price; those taking less than 50 gals. at one time will be billed at 4c per gal. over posted consumer t.w. price. Generally, the posted consumer t.w. price will be equivalent to the dealer price less 0.5c per gal.

Humble Oil & Refining Co.

Humble Motor Fuel
(*Regular Grade*)

	*T.W.	S.S.	Gaso-line Taxes	Kero-sine T.W.
Dallas, Tex.	7	11	5	7
Ft. Worth, Tex.	7	11	5	7
Houston, Tex.	8.5	12.5	5	8
San Antonio, Tex.	8	12	5	8

Thriftane
(Leaded, 67 Octane, Purple Gasoline)

Dallas	5.5	9	5
Ft. Worth	5.5	9	5
Houston	7	10.5	5
San Antonio	6	10	5

*These tank wagon prices apply to all classes of dealers and consumers.

Continental Oil

Conoco Bronz-z-z (Regular Grade)

	††T.W.	Dealer	Gaso-line Taxes	Kero-sine ‡T.W.
Denver, Col.	9	..	5	11.5
Grand Junction, Col.	12.5	..	5	15
Pueblo, Col.	10	..	5	9
Casper, Wyo.	11.5	..	5	11.5
Cheyenne, Wyo.	10.5	..	5	13
Billings, Mont.	12.5	..	6	13
Butte, Mont.	14	..	6	15.5
Great Falls, Mont.	13.5	..	6	15.5
Helena, Mont.	14.5	..	6	15.5
Salt Lake City, Utah	10.5	10.5	5	16
Boise, Ida.	**15.1	**15.1	6	18
Twin Falls, Ida.	**15.1	**15.1	6	18
Albuquerque, N. M.	8	..	†6.5	10
Roswell, N. M.	9.5	9.5	†6.5	8
Santa Fe, N. M.	10.5	10.5	*7	10
Ft. Smith, Ark.	9.5	..	5	7.5
Little Rock, Ark.	9.75	..	7.5	8
Texarkana, Ark.	8	..	5	7
Muskogee, Okla.	8	7	5	7
Oklahoma City, Okla.	6	..	5	6.5
Tulsa, Okla.	6	..	5	7

Demand Gasoline
(Third Grade)

Denver, Col.	8	..	5	....
Grand Junction, Col.	11.5	..	5	....
Pueblo, Col.	9	..	5	....
Casper, Wyo.	10.5	..	5	....
Cheyenne, Wyo.	9.5	..	5	....
Billings, Mont.	11.5	..	6	....
Butte, Mont.	11	..	6	....
Great Falls, Mont.	11.5	..	6	....
Helena, Mont.	13.5	..	6	....
Salt Lake City, Utah	9.5	9.5	5	....
Boise, Ida.	**14.1	**14.1	6	....
Twin Falls, Ida.	**14.1	**14.1	6	....
Albuquerque, N. M.	7	..	†6.5	....
Roswell, N. M.	8.5	8.5	†6.5	....
Santa Fe, N. M.	9.5	9.5	*7	....
Ft. Smith, Ark.	7	..	5	....
Little Rock, Ark.	7.5	..	7.5	....
Texarkana, Ark.	6	..	5	....
Muskogee, Okla.	7	6	5	....
Oklahoma City, Okla.	5.5	..	5	....
Tulsa, Okla.	5	..	5	....

†Includes city tax of 0.5c.
*Includes 1c city tax.
‡Prices are in t.w. deliveries to consumers and dealers.
**Prices include 0.1c to cover 1-mill tax for toll bridges.
††T.w. prices represent prices to consumer; also to dealers at points where no dealer prices are shown.

S. O. California

Standard Gasoline
(*Regular Grade*)

	T.W.	S.S.	Gaso-line Taxes	Kero-sine T.W.
San Francisco, Cal.	13.5	14.5	4	11.5
Los Angeles, Cal.	13	14	4	10
Fresno, Cal.	14.5	15.5	4	12.5
Phoenix, Ariz.	14	15	6	*12.5
Reno, Nev.	15.5	16.5	5	13.5
Portland, Ore.	14	15	6	13.5
Seattle, Wash.	14	15	6	†13.5
Spokane, Wash.	15.5	16.5	6	†16.5
Tacoma, Wash.	14	15	6	†13.5

Flight Gasoline
(*Third Grade*)

San Francisco, Cal.	12	13	4	....
Los Angeles, Cal.	11.5	12.5	4	....
Fresno, Cal.	13	14	4	....
Reno, Nev.	14	15	5	....
Phoenix, Ariz.	11	12	6	....
Portland, Ore.	12.5	13.5	6	....
Seattle, Wash.	12.5	13.5	6	....
Spokane, Wash.	13	14	6	....
Tacoma, Wash.	12.5	13.5	6	....

*Arizona has kerosine tax of 5c per gal. not included in above prices.
†Washington has 0.25c per gal. tax on kerosine sales not included in above prices.

Discount to 100% dealers, thru territory, off posted t.w. prices, on gasolines: on Standard Ethyl, Standard Gasoline and Stanavo Aviation, 3c per gal.; on Flight gasoline, 2c.

To commercial consumers: off tank wagon price: on single deliveries of 40 gallons and over. Stanavo Aviation, Standard Ethyl and Standard Gasolines, 3c. Flight Gasoline, 2c per gallon. Tank wagon delivery, less than 40 gals., 1c per gal. above posted t.w. price. Discounts on kerosine: in tank cars, 3c off tank truck price; plant deliveries to jobbers, 2.5c below tank truck price.

Canada

PRICES OF IMPERIAL OIL LTD.
Per Imperial Gallon, which is 1.2 U. S. Gallons
3-Star Imperial Gasoline
(*Regular Grade*)

	T.W.	Gasoline Taxes	Kero-sine T.W.
Hamilton, Ont.	15.5	8	16
Toronto, Ont.	15.5	8	16
Brandon, Man.	21	7	22
Winnipeg, Man.	19.5	7	20.5
Regina, Sask.	18.5	7	20.5
Saskatoon, Sask.	21	7	23
Edmonton, Alta.	18.9	7	20.9
Calgary, Alta.	16	7	18
Vancouver, B. C.	16	7	23
Montreal, Que.	16	8	16.5
St. John, N. B.	15	10	19
Halifax, N. S.	15	10	19

Discounts to undivided dealers, 1c off t.w. price, except Maritime Provinces where undivided dealers pay t.w. price. Divided dealers pay t.w. price, thru territory.

SOCONY-VACUUM OIL CO.

Buffalo, N. Y.	11.5	12.5
*New York City	9.5	10.5
Rochester, N. Y.	12.5	12.5
Syracuse, N. Y.	12.5	15
Boston, Mass.	11.5	11.5
Bridgeport, Conn.	11.5	12
Hartford, Conn.	11	11.5
Providence, R. I.	11.5	12.5

*Prices apply to consumers only in quantities over 1,000 gals. annually. For quantities under 1,000 gals. annually, add 0.5c per gal.

Aviation Gasoline

Following are tank car, tank wagon or dealer prices, as indicated, of aviation gasoline in several marketing territories.

S. O. OHIO
Thru Ohio

	Esso Aviation Consumer T.W.	Gasoline Taxes
74 octane	16	5
80 octane	17	5
87 octane	18	5

Discounts: For delivery on contract to hangar operators and resellers: 2c below consumer posted t.w. price, shown above.

S. O. INDIANA
Stanavo Aviation Gasoline
73 Octane Number

Chicago, Ill.	14.9
Detroit, Mich.	16.5
Milwaukee, Wis.	15.1
Minneapolis, Minn.	15.3
St. Louis, Mo.	14.5
Kansas City, Mo.	14.2
Fargo, N. D.	16.5
Huron, S. D.	15.8

Gaso-line Taxes
4
5
5
5
3
*4
5
5

*Includes 1c city tax.

HUMBLE OIL & REFINING CO.
74 Octane Aviation Gasoline, Clear

	Tank Car
FOB Baytown, Tex.	8.5

CONTINENTAL OIL CO.
Conoco Special Gasoline

	T.W. & Dealer Price	Gasoline Taxes
Denver, Colo.	15	5
Cheyenne, Wyo.	15.5	5
Helena, Mont.	22.5	6
Salt Lake City, Utah	18	5
Albuquerque, N. M.	14	*6.5

*Includes city tax of 0.5c.

S. O. CALIFORNIA
Stanavo Aviation Gasoline

	T.W.	Gaso-line Taxes
Phoenix, Ariz.	17.5	6
Los Angeles, Cal.	15	4
San Francisco, Cal.	15.5	4
Reno, Nev.	17.5	5
Portland, Ore.	16	6
Seattle, Wash.	16	6
Spokane, Wash.	19	6

Note: For discounts, etc., see note under Standard and Flight gasoline above.

(Continued on next page)

Tank Wagon Price Changes

(Continued from preceding page)

Naphtha (In Tank Wagon)

S. O. NEW JERSEY

	Posted Tank Wagon Prices	
	Mineral Spirits	V.M.&P.
Newark, N. J	11.5	15.5
Baltimore, Md	15.5	....
Washington, D. C	15	....

Discounts: Buyers taking following quantities at one time, get these discounts. Newark, 2c per gal. on 200 gals. or more; less than 200 gals., 0.5c higher price. Baltimore 2c off on 25 to 100 gals. and 3c on over 100 gals. Washington, 2c off to contract buyers.

ATLANTIC REFINING CO.

Philadelphia, Pa	12	14.5
Lancaster, Pa	13.5	16
Pittsburgh, Pa	14.5	14.5

Note: Prices for Mineral Spirits also apply to Stoddard Solvent; and prices for V.M.&P. Naphtha apply also to Light Cleaners Naphtha.

Discounts: Philadelphia, 200 gals. or more at one time, 2c per gal. less. Lancaster, contract buyers taking 1,000 gals. or more per year, one drum up, 2c per gal. less; non-contract buyers, 200 gals. or more at one time, 2c per gal. less. Pittsburgh, 500 gals. or more at one time, 2c.

S. O. OHIO

	S.R. Solvent	V.M.&P. Naphtha
Thru Ohio	12.5	13

Note: V.M.&P. naphtha prices also apply on Dry Cleaners naphtha, special Varnolene, Varnolene and Sohio Solvent. Discounts to contract consumers off t.w. price; 300 to 999 gals., 0.5c; 1,000 to 2,499 gals., 0.75c; 2,500 to 4,999 gals., 1c; 5,000 or more gals., 1.5c.

S. O. INDIANA

(Prices include state and federal taxes)

	Oleum Spirits	V.M.&P. Naphtha	Stanisol
Chicago, Ill	16.7	17	16.4
Detroit, Mich	19.7	18.7	20.2
Kansas City, Mo	14.4	15.4	14.9
St. Louis, Mo	14.7	15.7	13.4
Milwaukee, Wis	19.3	20.3	19.8
Minneapolis, Minn.	19.5	20.5	18.2

Note: All prices, with exception of Missouri points, include state tax. Prices shown are base prices, before discounts.

Naphtha (In Tank Cars)

In Tank Cars (F. o. b. refinery or seaboard terminal except Ohio, delivered price.)

	V.M.&P. Naphtha	Mineral Spirits
Baltimore	9.50	8.50
New York Harbor	9 9.5	8.75–9
Philadelphia district	10	8.25–9
Boston	9.5	9.5
Providence	9.5	9.5
†Ohio points, delivered	8.75	*8.25

*This is on rubber solvent.

†Ohio prices are those of S. O. Ohio. Its prices for D.C. naphtha, special Varnolene, Varnolene and Sohio Solvent are same as for V.M.&P.

Price Changes

Dates and amounts of changes. See table for full current prices.

S. O. New Jersey—Kerosine:
Charleston t. w. up 2.75c, Feb. 7.

Socony-Vacuum—Kerosine:
Buffalo and Jamestown t. w. cut 0.2c; Rochester cut 0.1c, Feb. 5.
Bridgeport t. w. cut 0.1c; Danbury cut 1.5c and New Haven cut 1c, Jan. 25.
Bangor t. w. cut 0.4c, Feb. 2.
Buffalo and Jamestown t. w. up 0.1c, Feb. 15.

Atlantic Refining—Kerosine:
Wilmington t. w. up 0.25c, Feb. 10.
Annapolis and Baltimore t. w. up 1c, Feb. 9.
Richmond t. w. up 0.3c, Jan. 27.

S. O. Ohio—Sohio X-70 and Renown Gasoline:
Toledo dealer price cut 0.5c, s. s. 1c, Feb. 19.

S. O. Nebraska—Kerosine:
Scottsbluff t. w. cut 1.4c, Feb. 16.

Correction—Continental Oil:
Feb. 7th reduction in Conoco Bronze t. w. at Albuquerque was 2.5c instead of 1.5c as stated in Feb. 14th N.P.N., Page 42. Reduction in Demand t. w. was 1.5c as shown in that issue.

Continental OilConoco Bronze and Demand Gasoline:
Casper t. w. cut 1c, Feb. 1.

Fuel Oil

S. O. New Jersey:
All t. w. fuel oil prices discontinued thru territory.

Socony-Vacuum Oil—Nos. 2, 3 and 4:
Rochester t. w. cut 0.2c, Feb. 6.

Atlantic Refining—No. 1:
Wilmington up 0.25c Feb. 10.

Coming Meetings

Ohio County Petroleum Industry Committee Officials, State Conference, Deshler-Wallick Hotel, Columbus, Ohio, Feb. 26.

Liquefied Petroleum Gas Assn., Cincinnati, Ohio, Feb. 26-28.

Ohio Petroleum Marketers Assn., Deshler-Wallick Hotel, Columbus, O., Feb. 27, 28 and 29.

Illinois Petroleum Marketers Assn., annual convention, Hotel Pere Marquette, Peoria, Ill., Feb. 27-29.

Iowa Independent Oil Jobbers' Assn., annual meeting, Hotel Fort Des Moines, Des Moines, March 5-7.

Indiana Independent Petroleum Assn., Spring Convention, Hotel Severin, Indianapolis, Ind., March 6, 7.

American Society for Testing Materials, Statler Hotel, Detroit, Mich., March 4-8.

Retail Petroleum Dealers Assn., Inc., Los Angeles, Calif., March 6-8.

American Petroleum Institute, Mid-Continent District, Division of Production, Wichita, Kan., March 14, 15.

Society of Automotive Engineers, National Aeronautic Meeting, Washington Hotel, Washington, D. C., March 14-15.

American Petroleum Institute, Pacific Coast District, Los Angeles, Calif., March 19.

Oil Trades Assn. of New York, Annual Meeting, Waldorf Astoria Hotel, New York, N. Y., March 21.

Independent Oil Men's Assn. of N. E., 17th Annual Convention, Copley Plaza, Boston, Mass., March 28.

American Petroleum Institute, Southwestern District, Division of Production, Houston, Tex., March 28, 29.

Western Petroleum Refiners Assn., Annual Meeting, Allis Hotel, Wichita, Kans., March 31, April 1, 2.

Society of Automotive Engineers, National Transportation & Maintenance Meeting, Mellon Institute Auditorium, Pittsburgh, Pa., March 28-29.

The Michigan Petroleum Assn., Sixth Annual Convention, Detroit-Leland Hotel, Detroit, Mich., April 3-4.

American Chemical Society, Cincinnati, Ohio, April 8-12.

Armour Institute of Technology, Annual Midwest Power Conference, Palmer House, Chicago, Ill., April 9-10.

Society of Exploration Geophysicists, Annual Meeting, Stevens Hotel, Chicago, Ill., April 9-11.

National Petroleum Association, Semi-Annual Meeting, Cleveland Hotel, Cleveland, O., April 18-19.

Pennsylvania State College, 9th Petroleum and Natural Gas Conference, State College, Pa., April 26-27.

Petroleum Industry Electrical Assn., Dallas, Tex., May 1 to 3.

American Gas Assn., Natural Gas Section, Houston, Tex., May 6-10.

American Assn. of Petroleum Geologists, Stevens Hotel, Chicago, April 10, 11, 12.

American Petroleum Institute, Eastern District, Division of Production, Columbus, O., April 11, 12.

National Petroleum Assn., 37th semi-annual meeting, Hotel Cleveland, Cleveland, O., April 18, 19.

American Institute of Mining & Metallurgical Engineers, Open Hearth Conference, Pittsburgh, Pa., April 24-26.

American Society of Mechanical Engineers, Spring Meeting, Worcester, New York, Hotel Bancroft, May 1-3.

American Institute of Chemical Engineers 32nd Semi-Annual Meeting, Statler Hotel, Buffalo, N. Y., May 13, 14 and 15.

Natural Gasoline Assn. of America, 19th annual convention, Hotel Tulsa, Tulsa, May 15, 16, 17.

International Petroleum Exposition and Congress, Tulsa, May 18-25.

American Petroleum Institute, 10th Mid-Year Meeting, Blackstone & Texas Hotels, Fort Worth, Tex., May 27-31.

Illinois-Indiana Petroleum Assn., Eighth Annual Petroleum Conference, Robinson, Ill., June 1.

Society of Automotive Engineers, Summer Meeting, The Greenbrier, White Sulphur Springs, W. Va., June 9-14.

American Society for Testing Materials, Chalfonte-Haddon Hall, Atlantic City, N. J., June 24-28.

National Lubricating Grease Institute, Annual Convention, Stevens Hotel, Chicago, Ill., Sept. 30, Oct. 1.

National Safety Congress & Exposition, Hotel Stevens, Chicago, Ill., Oct. 7-11.

TANK WAGON MARKETS, HEATING OILS

Prices in Effect Feb. 19, 1940

Following are posted tank wagon prices of various grades of heating oil at the points shown in various territories. Prices are in cents per gallon.

SOCONY-VACUUM OIL CO. INC.
(S. O. New York Division)

	Nos. 2 & 3	No. 4
New York City	7.00	7.00
Albany, N. Y.	7.20	6.70
Rochester, N. Y.	7.50	7.50
Boston, Mass.	7.20	7.20
Bangor, Me.	7.60	7.60
Manchester, N. H.	7.00	7.00
Burlington, Vt.	7.90	7.90
Hartford, Conn.	7.30	7.30
New Haven, Conn.	7.20	7.20
Providence, R. I.	7.20	7.20

Note: Prices for No. 1 fuel in Socony-Vacuum territory same as for kerosine which see in tank wagon table for various cities; prices change with kerosine.

ATLANTIC REFINING

	Numbers					
	1	2	3	4	5	6
Phila., Pa.	8	7.00	7.00	7.00	4.25	3.50
Allentown, Pa.	8.5	7.00	7.00	7.00	....	....
Wilmington, Del.	8.00	7.00	7.00	7.00	....	....
Springfield, Mass.	9.0	7.7	....	....	....	....
Worcester, Mass.	8.0	7.0	....	7.0	....	....
Hartford, Conn.	8.5	7.3	....	7.3	....	....

S. O. OHIO

	No. 1	No. 2	No. 3
Toledo	7.50	7.50	7.50
Rest of Ohio	7.50	7.50	7.00

Note: S. O. Ohio prices are for full compartment hose dumps, bucket dumps are 0.5c per gallon higher.

S. O. INDIANA
Stanolex Fuel and Furnace Oils

	No. 1 Fuel	Stanolex Furnace
Chicago	(a)6.75	6.75
Indianapolis	....	(b)7.8
Detroit	....	6.6
Milwaukee	8.4	7.7
Minneapolis	7.8	7.8
St. Louis	7.7	(c)6.7
Kansas City	6.8	6.8

(a) For 400 gals. and over; 150 to 399 gals., 7.25c; 1 to 149 gals., 8.25c.

(b) Excluding 4c state tax.

(c) For 400 gals. & over; 100 to 399 gals., 7c; 1 to 99 gals., 8c.

Note: Small-lot deliveries of light fuel oils range up to 2c higher than above quotations.

SEABOARD MARKETS, EXPORT AND COASTWISE

All prices on this page are publisher's opinion of open market quotations or sales, for spot shipment (10 to 15 days). In cargo markets, spot shipment is 90 days. Prices in cents per gallon, except heavy fuel oil in dollars per barrel, in tank car lots, f.o.b. refineries or seaboard terminals in districts designated, unless otherwise noted. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude. Unless otherwise noted, gasoline octane ratings are determined by C.F.R. Motor method, A.S.T.M. D-357-33T; and lubricating oil specifications determined according to A.S.T.M. methods, unless otherwise noted

Atlantic Coast Refiners' & Tanker Terminal Operators' Quotations (FOB Refineries & Terminals)

Prices Effective Feb. 19

MOTOR GASOLINE

District:	60-64 Oct.	65-66 Oct.	68-70 Oct.	72-74 Oct.	Kerosine and or No. 1 Fuel:
N. Y. harbor	6.50 – 6.70	(r) 6.50 –7.30	6.50 – 6.75	6.50 – 7.70	5.60 – 6.50
(a) N. Y. harbor	6.375– 6.70	(r) 6.40 –7.05	6.375– 6.75	6.40 – 7.20	5.50 – 6.50
Albany	.....	.....	.....	7.60 – 7.80	(m)5.70
Philadelphia	6.50 – 6.75	(m)6.75	6.50 – 6.75	6.75 – 7.75	5.50 – 6.00
Baltimore	6.25 – 6.75	(m)6.75	6.50 – 7.00	6.75 – 7.75	(m)6.00
Norfolk	(r) 6.625–6.875	(m)6.75	6.75 – 7.00	7.00 – 7.75	(p)5.50 –6.00
Wilm'ton	6.50 –6.875	(m)6.75	6.75 – 7.00	7.00 – 7.85	5.50 – 6.00
Char'ston	6.625–6.875	(m)6.75	(r)7.00	7.00 – 7.55	(p)5.50 –6.00
Savannah	6.25 – 6.875	.....	6.75 – 7.00	7.00 – 7.25	5.50 – 5.625
Jacksonville	6.25 – 6.875	.....	6.75 – 7.00	7.00 – 7.25	5.50 – 5.625
Miami	(r) 6.25 –6.875	.....	(m)7.00	(r) 7.00 –7.25	(m)5.50 –5.625
Tampa	6.25 – 6.875	.....	(m)7.00	7.00 – 7.25	5.50 – 5.625
Pensacola	(m)6.625–6.875	.....	.....	(m)7.00 –7.25	(m) 5.50 –5.625
Mobile	6.00 – 6.50	.....	(m)6.25	6.75 – 7.00	(m) 5.50 –5.625
Portland	.....	.....	(m)7.50	7.50 – 7.60	(m)5.90
Boston	6.50 – 7.25	(r) 6.75 –7.25	(r)6.75	6.75 – 7.50	(p) 5.70 –6.10
Providence	6.80 – 7.25	(m)7.25	(m)6.75	6.75 – 7.50	(p) 5.70 –6.10

FUEL OILS—Prices Effective Feb. 19

	Nos. 2-3	No. 4	No. 5	No. 6
N. Y. Harb.	5.10 – 6.00	5.10 – 6.00	$1.70 –$1.85	$1.50
N. Y. Harb., barges	5.00 – 6.00	5.00 – 6.00	.....	.....
Albany	(m)5.20	(m)5.20	(m)$2.00	(m)$1.70
Philadelphia	4.75 –5.60	4.50 – 5.35	$1.46 –$1.80	$1.25 –$1.50
Baltimore	(m)4.75	(m)4.50	(m)$1.47	(r) $1.25–$1.50
Norfolk	(m)5.25	.....	.....	(m)$1.50
Charleston	(m)5.50	.....	.....	.....
Savannah	.....	.....	.....	(m)$1.45
Jacksonville	.....	.....	.....	(m)$1.45
Tampa	.....	.....	.....	(m)$1.40
Portland	(m)5.40	(m)5.40	(m)$2.10	(m)$1.50
Boston	(r) 5.20 –5.70	(r) 5.20 –5.70	(r)$1.80	(m)$1.50
Providence	(r) 5.20 –5.70	(r) 5.20 –5.70	$1.75 –$1.80	(m)$1.50

District:	(c) Bunker C Fuel	(c) Diesel Oil
N. Y. harbor	(r)$1.50	$2.10 –$2.20
Philadelphia	$1.25 –$1.50	$2.10 –$2.20
Baltimore	(m)$1.50	$2.10
Norfolk	(m)$1.50	$2.10 –$2.20
Charleston	.....	$1.90 –$2.20
Savannah	(m)$1.45	$1.995
Jacksonville	(m)$1.45	$1.995 $2.10
Tampa	(m)$1.40	$1.995–$2.10
Portland	(m)$1.50	$2.20
Boston	(m)$1.50	$2.10 –$2.20
Providence	(m)$1.50	$2.10 –$2.20

	Diesel Oil Shore Plants	Gas House Gas Oil 28-34 Gravity
N. Y. harbor	5.10	5.20
Albany	5.20	....
Philadelphia	5.00	....
Baltimore	5.00	5.00
Norfolk	5.00	5.00
Charleston	5.00	....
Jacksonville	5.00	....
Tampa	5.00	....
Portland	5.40	5.50
Boston	5.20	5.30
Providence	5.20	5.30

Pacific Export

(e) (Quotations at seaboard, Los Angeles, cargo lots cents per gal., except where otherwise noted.)

Prices Effective	Feb. 19	Feb. 12
U. S. Motor, under 65 octane	5.75 – 6.00	5.75 – 6.00
400 e.p. blend, 65 oct. min.	6.00 – 6.25	6.00 – 6.25
390 e.p. blend, 66 oct.	6.125– 6.375	6.125– 6.375
390 e.p. blend, 68 oct.	6.25 – 6.50	6.25 – 6.50
375 e.p. blend, 70 oct.	6.375– 6.75	6.375– 6.75
(d) 38-40 gravity, w.w. kerosine	4.25 – 5.00	4.25 – 5.00
41-43 grav., w.w. kero.	4.50 – 5.00	4.50 – 5.00
44 grav., w.w. kero.	5.00 – 5.50	5.00 – 5.50
Cargo lots, per bbl.		
Diesel fuel, 24 & above	$1.25 –$1.35	$1.25 –$1.35
Diesel fuel, under 24	$1.15 –$1.25	$1.15 –$1.25
(f) 30-34 grav., diesel (gas oil)	$1.25 –$1.35	$1.25 –$1.35
(g) Grade C fuel	$0.68 –$0.73	$0.68 –$0.73
In Ships' Bunkers, or deep tank lots, per bbl.:		
(f) Diesel fuel	$1.35 –$1.45	$1.35 –$1.45
(g) Grade C fuel	$0.85 –$0.90	$0.85 –$0.90
Cased Goods: (Per case)		
U. S. M.	$1.45 –$1.55	$1.45 –$1.55
400 e.p. blend, under 65 oct.	$1.50 –$1.60	$1.50 –$1.60
375-400 e.p. blend, 65 oct. & above	$1.60 –$1.70	$1.60 –$1.70
(d) 40-43 grav., w.w. kero	$1.40 –$1.50	$1.40 –$1.50
Kero., p.w.	$1.35 –$1.45	$1.35 –$1.45

New York Export Quotations

(Cents per gal. in bbls. FAS New York)

CYLINDER OILS (Penna. Products)

	Feb. 19	Feb. 13
Bright stock:		
Light, 25 p.t.	(p) 34.00–36.00	(p) 36.00
Neutral oil:		
200 3 color, 25 p.t.	(n)36.00	(n)38.00
150 3 color, 25 p.t.	(p) 34.00–36.00	(p)36.00
600 s.r., unfilt.	(p) 22.50–23.00	(p)23.00
650 s.r., unfilt.	(p) 24.00–26.00	(p) 24.50–26.00
600 fl. s.r.	(p) 25.50–27.00	(p) 26.00–27.00
630 fl., s.r.	(p) 31.00–32.00	(p) 32.00

Seaboard Wax Quotations

(A.S.T.M. Tests. Melting points, however, are A.M.P., 3° higher than E.M.P. Export prices, FAS, c.l. Domestic prices, FOB, refr'ies., in bags, c.l., with 0.2c discount allowed for shipment in bulk, except where noted. Scale solid; fully refined slabs in bags)

Prices Effective	Feb. 19	
	New York	
	Domestic	Export
124-6 Y.C. scale	.....	(n)5.50
122-4 W.C. scale	(p) 5.50 –5.75	(p) 5.50 –5.75
124-6 W.C. scale	5.50 – 5.75	5.50 – 5.75
123-5 Fully rfd.	(n)6.25	.....
125-7 Fully rfd.	(m)6.30	(n)7.50
128-30 Fully rfd.	(h&p)6.10-6.40	(m)7.75
130-2 Fully rfd.	(h&n)6.60	(m)8.00
133-5 Fully rfd.	(h&p)6.65-6.85	(m)8.50
135-7 Fully rfd.	.....	(m)9.00
108-111 white Match wax	.....	(n&t)7.00

	New Orleans Export
124-6 Y.C. scale	(m)5.50
122-4 W.C. scale	.....
124-6 W.C. scale	(p) 5.50 –5.75
123-5 Fully rfd.	.....
125-7 Fully rfd.	(m)7.50
128-30 Fully rfd.	(m)7.75
130-2 Fully rfd.	(m 8.00
133-5 Fully rfd.	(m)8.50
135-7 Fully rfd.	(m)9.00

Gulf Coast Bulk

(FOB ship at Gulf for domestic and export; min. 20,000 bbls.)

Prices quoted by individual GCRA refiners on their products meeting GCRA specifications follow

	Feb. 19
GCRA Spec. Motor Fuels	
65 octane (CFR) unleaded	5.75 – 6.00
68 octane (CFR) unleaded	5.875 – 6.25
70 octane (CFR) unleaded	(p) 5.875–6.25
72-74 octane (CFR) unleaded	.....
72-74 octane (CFR) leaded	6.00 – 6.25

GCRA Spec. Kerosine & Gas Oils

Kerosine	(p)4.50
43 or below diesel index gas oil	(n)4.00
43-47 diesel index gas oil	(p) 4.00 –4.125
48-52 diesel index gas oil	(p)4.25
53-57 diesel index gas oil	(p)4.375
58 & above	(p)4.50

Prices quoted by refiners for other products follow:

MOTOR GASOLINE

Feb. 19

	60-62 Gravity, 400 e.p.	61-63 Gravity, 390 e.p.	64-66 Gravity, 375 e.p.
60 oct. unleaded	5.25-5.50	(p)5.25-5.375	(p)5.375-5.50
65 oct. unleaded	5.50-6.00	(p)5.50-5.625	(p)5.625-5.75
68 oct. unleaded	5.75-6.25	(p)5.875-6.00	(p)6.00
70 oct. unleaded	(p)5.875-6.25	(n)6.125	(n)6.25
72-74 oct. leaded	5.75-6.25	(n)6.00	(n)6.00

KEROSINE

	Feb. 19	Feb. 13
41-43 grav. w.w.	4.25 – 4.50	4.25 – 4.50

GAS OILS

Gas Oil (i):		
Below 43 diesel index	(n)4.00	(n)4.00
43-47 diesel index	(p) 4.00 –4.125	(p) 4.00 –4.125
48-52 diesel index	4.125– 4.25	4.125– 4.25
53-57 diesel index	(p)4.375	(p)4.375
58 & above	(n)4.50	(n)4.50

LIGHT FUEL OILS

No. 2	(n)4.125	(n)4.125

DIESEL and BUNKER OILS

(c) Diesel Oil	$1.70	$1.70
(c) Grade C bunker oil	$0.90 –$1.05	$0.90 –$1.05
Grade C bunker oil, cargoes	$1.00 –$1.05	$1.00 –$1.05

MID-CONTINENT LUBES

(Cents per gal. at Gulf; in packages, FAS.; in bulk FOB terminals)

	Feb. 19	
	(v) Packages	Bulk
200 vis. D. 210 brt. stock	(n)36.50	(n)30.80
200 vis. E 210 brt. stock	(n)35.50	(n)29.80
150 vis. D 210 brt. stock 0-10 p.p.	(p) 32.50–33.00	(p) 26.80–27.00
10-25 p.p.	(p)31.50	(p)25.80
150 vis. E 210 brt. stock	(n)31.50	(n)25.80
100 vis. D 210 brt. stock 0-10 p.p.	(n)31.50	(n)25.80
10-25 p.p.	(n)30.50	(n)24.80
200 vis. No. 3 col. neutral:		
0-10 p.p.	(n)22.00	(n)16.30
10-25 p.p.	(n)21.50	(n)15.80
180 vis. No. 3 col. neutral:		
0-10 p.p.	(n)21.50	(n)15.80
10-25 p.p.	(n)21.00	(n)15.30

SOUTH TEXAS LUBES

(Vis. at 100° cold test 0, bulk export shipment, FOB terminals.)

Unfiltered Pale Oils:	Feb. 19	Feb. 13
Vis. Color		
100 No. 3	6.00 – 6.50	6.00 – 6.50
200 No. 3	7.50 – 8.50	7.50 – 8.50
300 No. 3	8.00 – 9.00	8.00 – 9.00
500 No. 3½	9.00 –10.50	9.00 –10.50
750 No. 4	9.50 –11.00	9.50 –11.00
1200 No. 4	10.00 –13.50	10.00 –13.50
2000 No. 4	10.25	10.25
Red Oils:		
Vis. Color		
100 No. 5-6	6.00 – 6.50	6.00 – 6.50
200 No. 5-6	7.50 – 8.50	7.50 – 8.50
300 No. 5-6	8.00 – 9.00	8.00 – 9.00
500 No. 5-6	9.00 –10.50	9.00 –10.50
750 No. 5-6	9.50 –11.00	9.50 –11.00
1200 No. 5-6	10.00 –13.50	10.00 –13.50
2000 No. 5-6	10.25	10.25

Tanker Rates

(Approximate freight rates cents per bbl.)

	Last Paid	Owners Ask
Gulf-N. Atlantic (not E. of N. Y.): Hvy. Crude & fuel, (10 to 19.9 gravity)	60c	59 to 61c
Light Crude, (30 Grav. or Lighter)	53c	53 to 55c
Gasoline	66c	66 to 68c
Kerosine	69c	69 to 71c
Light Fuel	72c	72 to 74c

(a) In barge lots. (c) Ships' bunkers. Lighterage, additional at some points, not included. (d) 150 fire point. (e) For San Francisco cargo prices, add 5c per bbl. to cargo prices shown above. (f) Pacific Specification 200. (g) Pacific Specification 400. (h) Shipment in bags or in bulk. (i) Less than ½ of 1% sulfur. (j) Second-hand barrels. (k) Continental ports in range between Bordeaux and Hamburg, both inclusive. (l) Venezuela loading, same rate: Tampico, 2c to 3c per bbl. additional. (m) One supplier quoting. (n) One refiner quoting. (o) No quotations reported. (p) Two refiners quoting. (q) No rates reported. (r) Two suppliers quoting. (s) Sale. (t) Shipment in tight barrels. (v) New steel drums. (w) Last paid for mixed cargo. Full cargo light fuel reported at 72c.

CRUDE OIL MARKETS

Prices in $ per bbl. of 42 U. S. gals. at the well. A. P. I. gravity. Prices are effective as of 7 a. m. of dates as given

EASTERN FIELDS

Posted by Joseph Seep Purchasing Agency
(Effective Jan. 1, 1940, except Corning Nov. 4, 1939)

Bradford-Allegany (Penna. and N. Y.).....$2.75
Penna. Grade Oil in Southwest Penna. Pipe Lines.....$2.40
Penna. Grade Oil in Eureka Pipe Lines (West Virginia).....$2.34
Corning Oil in Buckeye Pipe Lines (Ohio)..$1.12

Posted by Other Companies

Tide Water Associated Oil Co.
Bradford-Allegany district (Penna. and N. Y.) (Effective Jan. 1, 1940).....$2.75
*The Pennzoil Co.: (Effective Jan. 1, 1940)
Penna. Grade Oil in National Transit Lines*$2.68
*The Pennzoil Co. posts $2.68 in Cochran, Franklin, Hamilton and Doolittle, Pa. fields, prices in other lower districts range down to $2.63 per bbl. at well.

MICHIGAN

Posted by Pure Oil Co.
(Effective Oct. 9, 1939)

Midland, Midland County.....$1.02
Sherman.....$0.97
Clare-Freeman.....$0.97

Posted by Simrall Corp.
(Effective Oct. 9, 1939)

Crystal, Greendale, Porter, Vernon and Wise..$1.02
Beaverton, Buckeye, Bentley, Edenville.....$1.00
Freeman and Redding.....$0.97
Arenac.....$0.82
(Effective Nov. 1, 1939)
West Branch.....$0.85

Posted by Sohio Corp. (Michigan Division)
(Effective Oct. 9, 1939)

Allegan and Kent Counties.....$1.03
(Effective Nov. 9, 1939)
Van Buren County.....$1.03

Posted by Bay Pipe Line Corp.
(Effective Oct. 9, 1939)

Bentley and Buckeye.....$1.00
Saginaw and Wise..$1.02 Clare.....$0.76

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.
(Effective June 8, 1939)

Illinois and Western Indiana.....$0.95
Illinois Basin.....$1.05

Posted by Sohio Corp.

Illinois Basin:
(Effective Oct. 21, 1939)
Salem (Lake Centralia).....$1.05
(Effective June 8, 1939)
Balance of Illinois Basin.....$1.05
(Effective Oct. 10, 1939)
Griffin (Ind.) pool, sand wells.....$0.95
Griffin (Ind.) pool, McCloskey lime.....$0.85

Posted by Carter Oil Co.
(Effective June 10, 1939)

Louden, Fayette County, Ill.....$1.05

Posted by Ashland Oil & Transportation Co.
(Effective June 9, 1939)

Somerset Oil in Ashland Lines, Kentucky:
Big Sandy River..$1.02 Kentucky River...$1.10

Western Kentucky

Posted by Sohio Corp.
(Effective June 9, 1939)

Birk City Area.....$0.90

Posted by Owensboro-Ashland Co.

Owensboro Area.....$1.00
Corydon Area (Henderson).....$0.90

CANADIAN FIELDS

Posted by Imperial Oil Limited
Western Ontario
(Effective Nov. 6, 1939)

Petrolia.....$2.10 Oil Springs.....$2.17

Alberta Turner Valley
(Prices f.o.b. field tankage)
(Effective Jan. 5, 1938)

Crude Oil

40-40.9°	$1.14	53-53.9	$1.40
41-41.9	1.16	54-54.9	1.42
42-42.9	1.18	55-55.9	1.44
43-43.9	1.20	56-56.9	1.46
44-44.9	1.22	57-57.9	1.48
45-45.9	1.24	58-58.9	1.50
46-46.9	1.26	59-59.9	1.52
47-47.9	1.28	60-60.9	1.54
48-48.9	1.30	61-61.9	1.56
49-49.9	1.32	62-62.9	1.58
50-50.9	1.34	63-63.9	1.60
51-51.9	1.36	64-64.9	1.62
52-52.9	1.38		

Crude Naphtha, 65 grav. & above.....$2.14

Absorption Gasoline

90% Rec., 20 lb. Reid v.p.....$1.94
90% Rec., 17 lb. Reid v.p.....$2.08

MID-CONTINENT—Oklahoma-Kansas

*(For effective dates, see footnote)

	S. O. Indiana	Carter Mag-nolia Shell	Conti-nental Texas Co.	Sin-clair Prairie
Below 21°	$0.70	$0.60	....	....
21-21.9	.72	.63	....	....
22-22.9	.74	.66	....	....
23-23.9	.76	.69	....	....
24-24.9	.78	.72	....	....
25-25.9	.80	.75	....	$0.58
26-26.9	.82	.78	....	.63
27-27.9	.84	.81	....	.68
28-28.9	.86	.84	$0.86	.73
29-29.9	.88	.87	.88	.78
30-30.9	.90	.90	.90	.82
31-31.9	.92	.92	.92	.86
32-32.9	.94	.94	.94	.90
33-33.9	.96	.96	.96	.96
34-34.9	.98	.98	.98	.98
35-35.9	1.00	1.00	1.00	1.00
36-36.9	1.02	1.02	1.02	1.02
37-37.9	1.04	1.04	1.04	1.04
38-38.9	1.06	1.06	1.06	1.06
39-39.9	1.08	1.08	1.08	1.08
40 & above	1.10	1.10	1.10	1.10

*Effective in 1938 by Carter Oil, Oct. 13, posting in Okla. only; Continental Oil, Oct. 11, with lowest grade below 29; Magnolia, Oct. 12, posting in Okla. only; Shell, Oct. 22; S. O. Indiana, Oct. 17; The Texas Co., Oct. 12. Aug. 31, 1939, by Sinclair-Prairie.

North-North Central and Central Texas

*(For effective dates, see footnote)

	Stano-lind	Sinclair Texas Co. Conti-nental Magnolia
Below 21°	$0.60	....
21-21.9	.62	....
22-22.9	.64	....
23-23.9	.66	....
24-24.9	.68	$0.79
25-25.9	.70	for
26-26.9	.72	oil
27-27.9	.74	below
28-28.9	.76	29°
29-29.9	.78	.81
30-30.9	.80	.83
31-31.9	.82	.85
32-32.9	.84	.87
33-33.9	.86	.89
34-34.9	.88	.91
35-35.9	.90	.93
36-36.9	.92	.95
37-37.9	.94	.97
38-38.9	.96	.99
39-39.9	.98	1.01
40 & above	1.00	1.03

*Effective Oct. 11, 1938 by Continental, in North Tex.; Oct. 12, 1938, by Texas Co. in North & North Central Texas. Texas Co.'s lowest grade is 28-28.9, at $0.79; by Magnolia, Dec. 3, 1938, in N. and N. Central Texas; Oct. 5, 1939 by Sinclair Prairie in Mexia and N. Cent. Texas.

Jefferson County, Texas—Beaumont

(Posted by Magnolia Petroleum Co., Effective Oct. 2, 1939, and by Stanolind Oil & Gas Co., for West Beaumont, Effective Oct. 2, 1939)

Below 20°	$0.86	30-30.9	$1.08
20-20.9	.88	31-31.9	1.10
21-21.9	.90	32-32.9	1.12
22-22.9	.92	33-33.9	1.14
23-23.9	.94	34-34.9	1.16
24-24.9	.96	35-35.9	1.18
25-25.9	.98	36-36.9	1.20
26-26.9	1.00	37-37.9	1.22
27-27.9	1.02	38-38.9	1.24
28-28.9	1.04	39-39.9	1.26
29-29.9	1.06	40 & above	1.28

TEXAS FIELDS

Posted by Humble Oil & Refining Co.

West Central Texas
(Effective Aug. 11, 1939)

24-24.9	$0.71	33-33.9	$0.89
25-25.9	.73	34-34.9	.91
26-26.9	.75	35-35.9	.93
27-27.9	.77	36-36.9	.95
28-28.9	.79	37-37.9	.97
29-29.9	.81	38-38.9	.99
30-30.9	.83	39-39.9	1.01
31-31.9	.85	40 & above	1.03
32-32.9	.87		

*Includes Brown, Callahan, Coleman, Comanche, Eastland, Fisher, Haskell, Jones, Shackelford, Stephens, Throckmorton and Young Counties.

Effective Aug. 29, 1939, Shell posted in Fisher county, Tex., prices 3c lower than Humble's West Central Texas prices; Shell's schedule begins with below 25, at $0.68 and ends with 40 & above, at $1.

Note: Effective Oct. 1, 1937, Humble prices are based on 100% tank tables at 60F.

East Central Texas
(Effective Aug. 11, 1939)

23-23.9	$0.78	32-32.9	$0.96
24-24.9	.80	33-33.9	.98
25-25.9	.82	34-34.9	1.00
26-26.9	.84	35-35.9	1.02
27-27.9	.86	36-36.9	1.04
28-28.9	.88	37-37.9	1.06
29-29.9	.90	38-38.9	1.08
30-30.9	.92	39-39.9	1.10
31-31.9	.94	40 and above	1.12

Posted by Pan American Pipe Line Co.
(Effective Oct. 2, 1939)

Cayuga, Anderson county.....$0.78
*Including Anderson, Cherokee, Limestone, Navarro counties.

PANHANDLE TEXAS

	Humble (Aug. 11, 1939) Carson Gray County	Hutchin-son	Texas Co. (Oct. 2, 1939) Sweet	Sour
28-28.9	$0.72	$0.67	....	....
29-29.9	.74	.69	....	....
30-30.9	.76	.71	....	....
31-31.9	.78	.73	....	....
32-32.9	.80	.75	....	....
33-33.9	.82	.77	....	....
34-34.9	.84	.79	$0.84	$0.79
35-35.9	.86	.81	.86	.81
36-36.9	.88	.83	.88	.83
37-37.9	.90	.85	.90	.85
38-38.9	.92	.87	.92	.87
39-39.9	.94	.89	.94	.89
40 & above	.96	.91	.96	.91

Effective Aug. 31, 1939, Sinclair Prairie met Humble in Panhandle Texas. Dec. 3, 1938, Magnolia posted same schedule as Humble.

*EAST TEXAS

By Humble, Shell, Sinclair-Prairie, Stanolind, Gulf, Magnolia, Texas Co., Tide Water-Associated $1.10

*Effective dates: Aug. 11, 1939, by Humble and Tide Water-Associated; Aug. 29, 1939, by Stanolind; Oct. 2, 1939 by Sinclair Prairie; Oct. 5, 1939 by Shell; Oct. 12, 1938, by Magnolia, Texas Co.; Oct. 13, 1938, by Gulf.

*Includes Cherokee, Gregg, Rusk, Smith and Upshur counties.

Posted by Shell Oil Co., Inc.
(Effective Oct. 5, 1939)

Polk County, Tex. (Livingston and Schwab-Wilcox areas).....$1.10

NORTHEAST TEXAS

(Posted by Humble, Oct. 2, 1939)

Talco.....$0.65

(Posted by Magnolia, Oct. 12, 1938)

Cass County and Panola County, Tex.:
Magnolia posts below 25° at $0.73, plus 2c differential for each degree, to top grade of 40 & above, at $1.05.

(Posted by The Texas Co., Oct. 12, 1938)

Cass County.....$1.05

WEST TEXAS and NEW MEXICO

(a) (For effective dates, see footnote)

	Humble	Stano-lind	Shell	Texas Co. Sinclair (c)
Below 20°	$0.53	....	$0.53	....
20-20.9	.55	....	.55	....
21-21.9	.57	....	.57	....
22-22.9	.59	$0.67	.59	....
23-23.9	.61	for	.61	....
24-24.9	.63	oil	.63	....
25-25.9	.65	Below	.65	$0.65
26-26.9	.67	26°.	.67	.67
27-27.9	.69	.69	.69	.69
28-28.9	.71	.71	.71	.71
29-29.9	.73	.73	.73	.73
30-30.9	.75	.75	.75	.75
31-31.9	.77	.77	.77	.77
32-32.9	.79	.79	.79	.79
33-33.9	.81	.81	.81	.81
34-34.9	.83	.83	.83	.83
35-35.9	.85	.85	.85	.85
36-36.9	.87	.87	.87	.87
37-37.9	.89	.89	for	for
38-38.9	.91	.91	oil	oil
39-39.9	.93	.93	36° &	36° &
40 & above	.95	.95	above.	above.

Posted by Magnolia Petroleum Co.
(Effective Oct. 12, 1938 in West Texas; Oct. 15, 1939 in Lea County, N. Mex.)

	West Texas	N. Mex.		West Texas	N. Mex.
Below 25.	$0.63	$0.63	33-33.9...	$0.81	$0.81
25-25.9	.65	.65	34-34.9...	.83	.83
26-26.9...	.67	.67	35-35.9...	.85	.85
27-27.9...	.69	.69	36-36.9...	.87	.87
28-28.9...	.71	.71	37-37.9...	.89	for
29-29.9...	.73	.73	38-38.9...	.91	oil
30-30.9...	.75	.75	39-39.9...	.93	36 &
31-31.9...	.77	.77	40 & over.	.95	above
32-32.9...	.79	.79			

Note: Magnolia's West Texas postings are in Crane, Glasscock, Howard, Mitchell, Upton and Winkler counties.

Pecos County, West Texas
(Posted by Humble Aug. 11, 1939 and Shell, Aug. 29 '39)

Pecos.....$0.78
Yates Shallow Pool (Shell only).....65

Posted by Sinclair Prairie Oil Marketing Co.
(Effective Aug. 31, 1939)

Eddy county, N. Mex.....$0.77

(a) Effective Aug. 11, 1939 by Humble; Shell Oil, Aug. 29, 1939; by The Texas Co., Oct. 12, 1938; Stanolind, Aug. 29, 1939; Sinclair Prairie, Aug. 31, 1939.
(c) Texas Co. posts $0.65 for below 26; Sinclair Prairie, $0.63 for below 25.

Note: Humble's postings are in these counties: Andrews, Crane, Crockett, Ector, Gaines, Glasscock, Howard, Reagan, Upton, Winkler and Yoakum, West Texas; and Lea county, N. Mex.; Shell, in Crane, Ector, Glasscock, Howard, Upton, Winkler, Yoakum, Lea; Stanolind in Hendrick and Henderson field, Winkler county; Texas Co. in Ward, Winkler and Lea.

Posted by Continental Oil Co.
(Effective Oct. 11, 1938)

Artesia, Jackson and Maljamar pools, New Mexico; gravity schedule beginning with below 29, at $0.61; 29-29.9, at $0.63; plus 2c differential for each gravity, up to 40 & above, at $0.85.

COLORADO

Posted by Continental Oil Co.
(Effective Oct. 11, 1938)
Ft. Collins and Wellington

Below 29	$0.81	35-35.9	$0.95
29-29.9	.83	36-36.9	.97
30-30.9	.85	37-37.9	.99
31-31.9	.87	38-38.9	1.01
32-32.9	.89	39-39.9	1.03
33-33.9	.91	40 & above	1.05
34-34.9	.93		

Canon City and Florence, Col.....$0.90

SOUTH AND SOUTHWEST TEXAS

All Shown Below Posted by Humble Oil & Refining Co.
(Effective Aug. 11, 1939)

Carroll, Clark, Darst Creek, Hilbig, Salt Flat and Zoboroski crudes.....$0.96
Van crude.....$0.93
Conroe.....$1.27
(Effective Oct. 2, 1939)
Flour Bluff and Jim Wells County.....$1.23
(Effective Sept. 14, 1939)
Hardin, Liberty county.....$1.10

Oct. 12, '38, Magnolia posted $0.96 in Darst Creek; $0.87 in Luling; $0.99 in Lytton Springs; $1.14 for Cleveland, and $1.02 in Hardin, both in Liberty county, Tex.

Oct. 12, '38, The Texas Co. posted $0.96 in Darst Creek.

(Continued on next page)

CRUDE OIL MARKETS

(Continued from preceding page)

***Anahuac-Dickinson**
(Effective Oct. 2, 1939)

Below 20°	$0.81	30-30.9	$1.03
20-20.9	.83	31-31.9	1.05
21-21.9	.85	32-32.9	1.07
22-22.9	.87	33-33.9	1.09
23-23.9	.89	34-34.9	1.11
24-24.9	.91	35-35.9	1.13
25-25.9	.93	36-36.9	1.15
26-26.9	.95	37-37.9	1.17
27-27.9	.97	38-38.9	1.19
28-28.9	.99	39-39.9	1.21
29-29.9	1.01	40 & above	1.23

*Anahuac-Dickinson includes Cedar Point, Fairbanks, Gillock, Hull, Pierce Junction and Raccoon Bend (shallow sand) and Turtle Bay.

Raccoon Bend (Deep sand crude) Tomball and Satsuma
(Effective Aug. 11, 1939)

22-22.9	$0.95	32-32.9	$1.15
23-23.9	.97	33-33.9	1.17
24-24.9	.99	34-34.9	1.19
25-25.9	1.01	35-35.9	1.21
26-26.9	1.03	36-36.9	1.23
27-27.9	1.05	37-37.9	1.25
28-28.9	1.07	38-38.9	1.27
29-29.9	1.09	39-39.9	1.29
30-30.9	1.11	40 & above	1.31
31-31.9	1.13		

Dec. 3, 1938, Magnolia posted above price and gravity schedule in Tomball. Effective Aug. 29, 1939, Stanolind met Humble in Tomball, except that Stanolind's schedule begins with below 29 at $1.07.

LOUISIANA-ARKANSAS
Posted by Standard Oil Co. of Louisiana
(†) (For effective dates, see footnote)

Gravity	*N. La. Ark. Sweet	Bunkie Eola, La.	*South La. Sour	*Ark. Sour	Baton Rouge-University
Below 20°	....	....	....	....	$0.79
20-20.9	$0.73	$0.83	‡$0.74	$0.63	82
21-21.9	for	for	77	for	85
22-22.9	oil	oil	80	oil	88
23-23.9	Below	Below	83	Below	91
24-24.9	25°.	25°.	86	25°.	94
25-25.9	.75	.85	.89	.65	.97
26-26.9	.77	.87	.92	.67	1.00
27-27.9	.79	.89	.94	.69	1.02
28-28.9	.81	.91	.96	.71	1.04
29-29.9	.83	.93	.98	.73	1.06
30-30.9	.85	.95	1.00	.75	1.08
31-31.9	.87	.97	1.02	.77	1.10
32-32.9	.89	.99	1.04	.79	1.12
33-33.9	.91	1.01	1.06	.81	1.14
34-34.9	.93	1.03	1.08	.83	1.16
35-35.9	.95	1.05	1.10	.85	1.18
36-36.9	.97	1.07	1.12	.87	1.20
37-37.9	.99	1.09	1.14	.89	1.22
38-38.9	1.01	1.11	1.16	.91	1.24
39-39.9	1.03	1.13	1.18	.93	1.26
40 & above	1.05	1.15	1.20	.95	1.28

(Effective Aug. 30, 1939)

Smackover, Ark.	$0.73
Cotton Valley Distillate	$1.20

*N. La.-Ark. Sweet includes Caddo, Cotton Valley, Cross Lake, De Soto, Haynesville, Homer, Rodessa, Sabine and Sligo, La. crudes, and Miller county, Ark. S. La. Sour includes Choctaw, Darrow, N. Crowley, Roanoke and St. Martinsville. S. Ark. Sour includes Buchner, Magnolia and Village pools.

†N. La.-Ark. Sweet crude and S. La. Sour effective Aug. 30, 1939, except Cross Lake, La., Sept. 7, Baton Rouge-Univ., Sept. 11, and Bunkie and Eola, Oct. 23, 1939; and Ark. Sour, Sept. 13, 1939.

‡For Below 21°.

Effective Sept. 8, 1939, Gulf Refg. Co. met S. O. La's. N. La.-Ark. Sweet prices in Bull Bayou, Caddo, Crichton, De Soto, Haynesville, Homer, and El Dorado

Posted by Arkansas Fuel Oil Corp.
(Effective Jan. 28, 1937)

Urania, La.	$1.02

Posted by Continental Oil Co.
(Effective Oct. 11, 1938)

Tepetate and Ville Platte, La.	$1.03

(Effective Jan. 1, 1939)
Abbeville, La.

Below 36	$0.92	38-38.9	$0.98
36-36.9	.94	39-39.9	1.00
37-37.9	.96	40 & above	1.02

Posted by Caddo Crude Oil Purchasing Corp.
(Effective Aug. 14, 1939)

Allison area, Shreveport field	$0.95

Lisbon, N. La.
(Effective Sept. 14, 1939)

27-27.9	$0.66	32-32.9	$0.76
28-28.9	.68	33-33.9	.78
29-29.9	.70	34-34.9	.80
30-30.9	.72	35 & above	.82
31-31.9	.74		

Lisbon prices met by Gulf, Sept. 14.

Note: S. O. Louisiana prices in all La.-Ark. fields, effective Oct. 5, 1938, are on 100% tank table basis.

GULF COASTAL FIELDS
(a) **(For effective dates, see footnote)**

Gravity	Continental Humble Sinclair Stanolind	Refugio Crude (Humble, Continental)	Texas Co.	Shell
Below 20	$0.86	$0.91	$0.86	(b)$0.79
20-20.9	.88	.93	.88	.81
21-21.9	.90	.95	.90	.83
22-22.9	.92	.97	.92	.86
23-23.9	.94	.99	.94	.89
24-24.9	.96	1.01	.96	.92
25-25.9	.98	1.03	.98	.95
26-26.9	1.00	1.05	1.00	.98
27-27.9	1.02	1.07	1.02	1.00
28-28.9	1.04	1.09	1.04	1.02
29-29.9	1.06	1.11	1.06	1.04
30-30.9	1.08	1.13	1.08	1.06
31-31.9	1.10	1.15	1.10	1.08
32-32.9	1.12	1.17	1.12	1.10
33-33.9	1.14	1.19	1.14	1.12
34-34.9	1.16	1.21	1.16	1.14

(Continued in next column)

Gravity	Continental Humble Sinclair Stanolind	Refugio Crude (Humble, Continental)	Texas Co.	Shell
35-35.9	1.18	1.23	for oil	for oil
36-36.9	1.20	1.25	oil	oil
37-37.9	1.22	1.27	34° &	34° &
38-38.9	1.24	1.29	above.	above.
39-39.9	1.26	1.31		
40 & above	1.28	1.33		

(a) Effective Oct. 2, 1939 by Continental, Humble and Texas Co.; Oct. 3, 1939 by Sinclair and Stanolind; Aug. 29, 1939 by Shell. Stanolind's lowest grade is below 21, at $0.88. Refugio, effective Oct. 2, '39 by Humble.

(b) Shell posts these prices in Iowa district, Black Bayou and White Castle, La.; prices in Iowa district have 2 lower grades: below 18, at $0.75, 18-18.9, $0.77; and 19-19.9, is $0.79.

Note: Humble's Gulf Coast prices apply in these Texas fields: Amelia, Clear Lake, Goose Creek, Mirando which includes Duval, Jim Hogg, Webb and Zapata counties and Heyser and Placedo fields; Mykawa, Sugarland, Thompsons and Webster.

Humble's prices in Refugio include crudes purchased in Saxet, East White Point, Greta, O'Connor-McFadden, Taft, Plymouth and Tom O'Connor fields.

Stanolind's prices apply in High Island and Spindletop; also in Clinton, Hastings and South Houston, where, effective Jan. 1, 1940, lowest grade is below 21° at $0.88; rest of schedule same as other Gulf Coast. Magnolia posts Mirando, effective Oct. 2, same prices as Humble. Texas Co.'s prices are in Texas and La., Gulf Coast; its prices on Refugio are same as Humble's up to 28 gravity; 28 & above, $1.09; on Duval-Mirando same as Humble's up to 28; 28 & above, $1.04; it posts Golden Meadow, La., 24-30 grav., $0.90, plus 2c differential, to 40 & above, $1.10.

Posted by Shell Oil Co., Inc.
(Effective Aug. 29, 1939)

Gibson field, Terreborne Parish, La.	$1.04

ROCKY MOUNTAIN FIELDS
Posted by Stanolind Oil & Gas Co.
(Effective Oct. 11, 1938)

Salt Creek, (except Tensleep crude), Midway and Dutton Creek, Wyo., same schedule as Stanolind posts in Oklahoma-Kansas, ranging from $0.86 to $1.10, which see under Mid-Continent crude on previous page.

Tensleep, Salt Creek field	$0.646
Hes, heavy	0.92
Elk Basin, light	0.90
Grass Creek, light	0.90
Frannie light	0.55
Grass Creek, heavy	0.40
Hamilton Dome, Wyo	0.35
Frannie heavy	0.42

Posted by Ohio Oil Co.
(Effective Oct. 11, 1938)

Elk Basin, Wyo.	$0.90	Rock Creek	1.00
Grass Creek, light	0.90	Lance Creek	0.77
Dry Creek, Mont.			0.92

(Effective May 1, 1938)

Grass Creek, heavy	$0.50

(Effective Nov. 16, 1937)

Sunburst, Mont.	$0.90

Posted by Continental Oil Co.
(Effective Oct. 11, 1938)

Cat Creek, Mont.	$1.10
Big Muddy, Wyo.	0.98
Lance Creek, Wyo.	0.77

CALIFORNIA, *Posted by Standard Oil of California*

All gravities above those quoted take highest price offered in the field. Prices effective Feb. 1, 1940

Gravity	Signal Hill (Long Beach) and others*	Seal Beach	Huntington Beach	Inglewood	Playa Del Rey	Olinda Brea Canon	Athens-Rosecrans	Torrance	Richfield	Whittier East Coyote (La Habra)	Montebello	West Coyote Hills	Santa Fe Springs	Greeley Canal	Coles Levee Richfield Western	Mountain View and others**	Elk Hills	Buena Vista Hills, Midway-Sunset, Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge	Santa Maria Val. (Union Oil, Sept. 1 '39)
14-14.9	$0.65	$0.64	$0.63	$0.64	$0.65	$0.61	....	$0.65	$0.61	$0.61	$0.62	$0.63	....	....	....	$0.60	$0.60	$0.60	$0.60	$0.60	....	$0.42
15-15.9	.65	.64	.63	.64	.65	.61	....	.65	.61	.61	.62	.63	....	....	....	.60	.60	.60	.60	.60	....	.44
16-16.9	.65	.64	.63	.64	.65	.61	....	.65	.61	.61	.62	.63	....	....	....	.60	.60	.60	.60	.60	....	.45
17-17.9	.65	.64	.63	.68	.65	.61	....	.65	.61	.61	.62	.63	....	....	....	.60	.60	.60	.60	.60	....	.46
18-18.9	.65	.64	.63	.71	.65	.65	....	.68	.61	.61	.62	.63	....	....	....	.60	.60	.60	.60	.60	....	....
19-19.9	.69	.64	.67	.75	.70	.69	....	.72	.61	.65	.62	.63	....	....	....	.60	.64	.64	.64	.61	$0.60	....
20-20.9	.73	.64	.72	.79	.76	.74	....	.75	.65	.69	.62	.67	....	....	....	.60	.69	.69	.69	.62	.60	....
21-21.9	.78	.64	.76	.82	.81	.78	....	.79	.69	.73	.62	.72	$0.63	....	....	.64	.74	.74	.74	.66	.60	....
22-22.9	.82	.69	.81	.86	.86	.82	....	.82	.73	.77	.66	.76	.63	....	....	.68	.79	.79	.78	.70	.63	....
23-23.9	.86	.75	.85	.89	.92	.86	$0.71	.86	.78	.82	.71	.81	.67	....	....	.71	.84	.84	.82	.74	.67	....
24-24.9	.90	.80	.90	.93	.97	.90	.77	.89	.82	.86	.75	.85	.72	....	....	.75	.89	.89	.86	.78	.71	....
25-25.9	.95	.86	.94	.96	1.02	.95	.82	.93	.86	.90	.80	.89	.77	....	....	.79	.94	.94	.90	.82	.75	....
26-26.9	.99	.91	.99	1.00	1.08	.99	.88	.96	.90	.94	.84	.94	.82	....	....	.83	.99	.99	.95	....	....	....
27-27.9	1.03	.97	1.03	1.04	....	1.03	.94	1.00	.94	.98	.89	.98	.87	$0.83	$0.92	.87	1.04	1.04	.99	....	....	....
28-28.9	1.07	1.02	1.07	1.07	....	1.07	.99	1.03	.98	....	.93	1.02	.91	.86	.96	.91	1.09	1.09	1.03	....	....	....
29-29.9	1.10	1.07	1.11	1.10	....	1.10	1.04	1.06	1.02	....	.98	1.06	.96	.90	.99	.95	1.14	1.14	1.07	....	....	....
30-30.9	1.14	1.12	1.15	1.14	....	1.14	1.09	1.09	Elwood Terrace	....	1.02	1.10	1.01	.94	1.02	.99	1.19	1.19	1.11	....	....	....
31-31.9	....	....	....	1.17	....	1.17	1.14	Elwood Terrace		....	1.07	1.14	1.05	.98	1.06	1.02	1.24	1.24	Kettleman Hills		....	....
32-32.9	....	....	....	1.20	....	1.20	1.19	F. o. b. ship.		....	1.11	1.18	1.09	1.02	1.09	1.06	1.29	1.29	....	....	....	....
33-33.9	....	....	....	....	....	....	1.24	....	$1.21	....	1.15	1.22	1.14	1.06	1.13	1.10	1.34	1.34	....	$1.12	....	....
34-34.9	....	....	....	....	....	....	1.29	....	1.25	....	1.20	1.26	1.19	1.10	1.16	1.14	....	....	....	1.17	....	....
35-35.9	....	....	....	....	....	....	1.34	....	1.29	....	1.24	....	1.23	1.14	1.20	....	....	....	....	1.21	....	....
36-36.9	....	....	....	....	....	....	1.39	....	1.33	....	1.28	....	1.27	1.18	1.23	....	....	....	....	1.25	....	....
37-37.9	....	....	....	....	....	....	1.44	....	1.37	....	1.33	....	1.31	1.22	1.26	....	....	....	....	1.29	....	....
38-38.9	....	....	....	....	....	....	1.49	....	....	....	1.37	....	1.36	1.25	1.30	....	....	....	....	1.33	....	....
39-39.9	....	....	....	....	....	....	1.54	....	....	....	1.42	....	....	1.29	1.34	....	....	....	....	1.38	....	....
40-40.9	....	....	....	....	....	....	1.59	....	....	....	1.46	....	....	1.33	1.37	....	....	....	....	....	....	....
41-41.9	....	....	....	....	....	....	....	....	....	....	1.50	....	....	1.37	1.40	....	....	....	....	....	....	....
42-42.9	....	....	....	....	....	....	....	....	....	....	1.54	....	....	1.41	1.44	....	....	....	....	....	....	....
43-43.9	....	....	....	....	....	....	....	....	....	....	1.59	....	....	1.45	1.47	....	....	....	....	....	....	....
44-44.9	....	....	....	....	....	....	....	....	....	....	1.63	....	....	1.49	1.51	....	....	....	....	....	....	....
45-45.9	....	....	....	....	....	....	....	....	....	....	1.67	....	....	1.53	1.54	....	....	....	....	....	....	....
46-46.9	....	....	....	....	....	....	....	....	....	....	1.71	....	....	1.57	1.57	....	....	....	....	....	....	....
47-47.9	....	....	....	....	....	....	....	....	....	....	....	....	....	1.61	....	....	....	....	....	....	....	....
48-48.9	....	....	....	....	....	....	....	....	....	....	....	....	....	1.64	....	....	....	....	....	....	....	....

FOB Standard Pipeline

*El Segundo prices same as Signal Hill. Wilmington prices same as Signal Hill, except below 19 gravity prices are: 14-16.9, $0.60; 17-17.9, $0.62; 18-18.9, $0.64.
**Includes Newhall, McKittrick, Kern River, Round Mountain and Kern Front, schedule for which ends with 19-19.9. Mountain View schedule begins with 19-19.9.

Index to Advertisers

This index is published as a convenience to the reader. Every care is taken to make it accurate, but National Petroleum News assumes no responsibility for errors or omissions.

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Los Angeles Passes New Bond Posting Ordinance

N. P. N. News Bureau

LOS ANGELES, Jan. 20.—Under a new city ordinance, recently passed by the council, a $2000 bond will be required for each permit to erect, construct, maintain, or operate any derrick, refinery, or natural gasoline plant, or a $10,000 blanket bond covering all such facilities.

Formerly, a bond of $5000 was required for each facility, and a $10,000 blanket bond for two or more facilities. Companies having less than five facilities, will benefit from this new amendment, it was said.

New Pipeline to Be Built

TULSA, Feb. 19.—It will be another 30 days before contract for construction of a 320-mile six-inch pipeline from Cut Bank, Mont., to Spokane, Wash., will be let by Inland Empire Refineries, Inc., it was learned here today.

The proposed pipeline, to supply Inland Empire's Spokane refinery with crude, will cost about $2,500,000 according to reports.

More Petroleum Engineers

Petroleum is attracting more engineering students than any other field, according to a recent publication of the American Institute of Mining and Metallurgical Engineers. Metallurgical engineering takes second highest honors.

According to its figures, 790 students studied petroleum engineering in the academic year 1930-31, as compared with 3538 students in the academic year 1938-39.

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"STRICTLY PERSONAL"

Dixie Distributors of Michigan and Texas have elected state officers for 1940. President **R. E. Decker,** Detroit, Plymouth Oil Co., heads the Michigan group. **A. A. McGillivray,** Bad Axe, S. T. & H. Oil Co., was named vice-president, and **Paul R. Kempf,** Ann Arbor, Staebler-Kempf Oil Co., is secretary.

Texas Dixie Distributors named **Travis Peacock,** Vernon, of Cox & Peacock, president. **Odis Gray,** Hillsboro, Independent Oil Co., retiring president was elected secretary, and **T. C. Orr,** Corsicana, Dixie Orr Oil Co., remains treasurer.

* * *

Two more Chicago oil men, **C. S. Rosenthal,** Apex Motor Fuel, and **Oscar Peterson,** George C. Peterson Co., joined the Florida colony of oil men who went south to escape the winds and snow of Michigan Boulevard.

* * *

Staebler Oil Co., Ann Arbor, Mich., and one of the oldest independent oil companies in the state has changed its name to the Staebler-Kempf Oil Co. The Staebler company was organized in 1918 by **J. Fred Staebler** and **Edward W. Staebler.** Properties of J. Fred Staebler and **Paul R. Kempf** in Saline and Brighton, Mich., were merged with the Staebler Oil Co. in 1926.

* * *

This shows a tense moment at the banquet, held in connection with Kansas Oil Men's Assn. convention at Wichita, Kan., Feb. 12-13. The little girl, held up to the microphone by **E. M. Taylor,** Kinsley, of Kansas Home Oil Co., is announcing prize winners. At right, is **G. Denny Moore,** New York, managing director of Gasoline Pump Manufacturers Assn., one of the featured speakers

Col. T. H. Barton, president of Lion Oil Refining Co., has relinquished the presidency of the Arkansas Livestock Show Ass'n. because he does not believe the authority should be vested for any great length of time in any one particular person. He was then unanimously chosen to fill the newly-created post of executive committee chairman of the association.

* * *

Dr. Merle R. Mechan, general superintendent of New Jersey Standard's Bayway refinery has been appointed general manager of the company's refineries at Baltimore and Charleston, S. C. **Donald L. Ferguson,** Dr. Mechan's assistant will succeed him as general superintendent at Bayway. Both appointments are effective April 1.

* * *

Six Wichita, Kan. men have been named committee chairmen to handle the 1940 spring meeting of the Mid-Continent district of the American Petroleum Institute's production division, to be held March 14 and 15 at Wichita. They are: Program Committee, **H. E. Miller,** Lario Oil and Gas Co.; Registration, **L. R. Pickrell,** T. C. Johnson Co.; Finance, **A. S. Ritchie,** McPherson Drilling Co.; Publicity, **R. E. Adams,** Cities Service Oil Co.; Entertainment, **H. W. Cardwell,** Allsteel Products Mfg. Co., and Ladies Entertainment, **Mrs. G. A. Holloway,** wife of **G. A. Holloway,** Lee C. Moore & Co., Inc. All committee chairmen are located at Wichita.

* * *

H. C. Wurster, northern division manager for Mid-Continent Petroleum Corp. has announced the creation of four northern district sales offices, and the appointment of district sales managers and assistants.

C. E. Burright, formerly division manager of retail sales, will head the district which embraces Waterloo, Cedar Rapids and Mason City, Iowa, and extending north to Rochester, Minn. **R. R. Ford,** formerly district superintendent of the wholesale department will be assistant manager for this area.

W. F. Penaluna, formerly division manager of wholesale sales at Waterloo, was appointed manager of district which includes Des Moines and the major portion of southeastern Iowa. **J. H. Booth,** formerly manager at Sioux City will assist Mr. Penaluna.

W. C. Heavrin, former assistant manager of wholesale department, and **H. H. Patterson,** district superintendent of retail department will be district manager and assistant, respectively, for the district which includes the greater part of the south and west sections of Iowa, and eastern Nebraska.

The fourth new district, which includes Davenport and Dubuque, Ia. and extends east and north to include suburban Chicago and Madison, Wis., will be headed by **H. H. Spiegel,** former assistant division manager of the retail repartment, with **D. M. Aarons,** assistant.

* * *

John E. Bunce was elected president for 1940 of the Retail Gasoline Dealers Ass'n. of Milwaukee, Wis. **William H. Heise** was named vice-president, **Harold T. Hanlon,** secretary, and **Arthur Gennrotske,** was elected treasurer. **Ray Kobs** was named chairman of the Finance and Auditing Committee of the association for 1940. Other committee chairmen named were: **Henry Frey,** Delinquent Members Committee: **Clarence Johnson,** Membership; **Harold T. Hanlon,** Trade Practices; **Arthur Gennrotske,** Welfare; **Eugene Krieger,** Identification; and **Robert Dunford,** Entertainment.

* * *

Leo Nagorski, member of board of Cleveland Ass'n. of Petroleum Retailers, and vice-president of that group in 1939, has been named Vice-Mayor and President of the City Council of Newburgh Heights, a suburb of Cleveland.

* * *

Dr. Donald Price, chief research chemist for National Oil Products Co., Harrison, N. J., was named first president of the newly-organized Chemists Alumni Ass'n. of Columbia University, New York.

* * *

Major James H. Doolittle, manager, aviation department, Shell Oil Co., has been elected president of the Institute of Aeronautical Sciences.

* * *

E. L. "Barry" Barringer, for 13 years a member of NATIONAL PETROLEUM NEWS' editorial staff and for the past 7 years working out of NPN's Chicago news bureau, has joined Ethyl Gasoline Corp. For the present, Barry will be located in Ethyl's New York office, working under **Ralph Champlin,** public relations director.

* * *

F. A. Stivers, president of the Texas Empire Pipeline Co., has been named member of the Citizens' Committee, succeeding **B. P. Sibole,** vice president of Stanolind Pipeline Co., resigned. The committee is composed of Tulsans from various civic organizations and indorses candidates for Tulsa's school board. Mr. Stivers will be the Chamber of Commerce representative.